Ralph Nader and the SPA debate proposed software license law. Opinion, page 33



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Staffing woes deepen

Offshore talent pool costly, dwindling

By Julia King

COMPANIES LOOKING to offshore programmers to defuse year 2000 time bombs and develop systems are in for a rude

Worldwide, the pool of available programming talent is drying up. That means companies might not be able to find



2000 proj cts in oo time. And it Offshere talent, sage 129

Contract workers rake it in; pay to jump 9% By Julia King

GET OUT YOUR WALLETS. Corporate technology ma ers will have to dig deeper to pay contract workers, whose salaries will increase an average of near

ly 9% this year. count on having more contractors on their payrolls. New

employees, are making a beeline for the higher-paying con-

and enterprising technical workers, along with many longtime information systems Centract salaries, page 129

Tivoli users desperately seek support

Warehouse mergers, page 16 And Tivoli officials told Com puterworld the company would stpone a version of the Tivoli Management Environment 10 tools for smaller networks until major corporate customers are

> "Tivoli is overwhelmed," said Wayne Heleniak, a systems programmer responsible for net-Tiveli, page 14



Year 2000 glitches may be everywhere

▶ Phone infrastructure, medical devices at risk By Thomas Haffman

information systems have been

But the elevator won't budge

prepared for the oo date

That's the worst-case scen and Mitch Retts if your 'IS department's year 2000 experts keep their blind YOU GLIOS INTO your office ers on and ignore the date roll building on Monday morning. over problem that could confuse Jan. 1, 2000, confident that your

systems outside traditional IS control. Those range from eleva tors and heating controls to Year 2000, page 28

a wide variety of commercial

heat doeso't work. And you can't

place a telephone call because the PRY is down

Data warehouse nightmare The building is cold because the By Patrick Drydes Mergers cause major headaches for IS, end users AUSTIN, TEXAS By Crair Stedman warehouses as key information FRUSTRATEO USERS With multimillion-dollar enterprise systems tools. Corporate merg-IF RUILOING a data warehouse ers and acquisitions are compli management projects at stake cating life for 15 departments got an apology last week from sounds difficult, try merging two completely different ones and the end users who rely on Tivoli Systems, Inc., which promised a blank-check effort to That's becoming a big headwarehoused information to back ache these days as more and up their business decisions. beef up support.

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more companies adopt data

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Things Not Meshing? Call a Company...

C trenew 2000

NT scalability lures skeptical customers

Migration plans hinge on business needs

By Laura DiDio and feikumar Viiavan

SERING IS BELIEVING. That's the sttitude users are taking toward this week's much-hyped Microsoft Corp. Scalability Day

Microsoft will try to make the case that new versions of Windows NT and SQL Server will add enough muscle to make the software platforms competitive in the enterprise.

Twelve users interviewed by Computerworld said they are enthused by Microsoft's scalability initiatives. But they said migration plans will be dictated by business needs, not hype.

'Our shop will continue to be s hybrid Unix/Windows NT shop. Our mission-critical data bases are on Unix systems." said Fred Pullen, a systems and with data- and transacti

current scalability limitations of Windows NT but said they still are moving whatever applications they can to it.

"I don't want to wait until it is fully developed" to start migrat-ing applications, said John Hickey, executive vice president of technology at Nasdaq Stock Market, Inc.'s Trumbull, Conn. data center. He said he doesn't expect to migrate Nasdaq's trad-ing applications to Windows NT for another two years. "Meantime, we will migrate those seg

ments of my applications that can suffer minor outages to The NT Server 5.0 Enterprise. which will ship next year, will provide an enhanced feature set fine-tuned for large businesses

NT" he said

Windows HT Server doesn't match Unit's scatability, but that hear't diminished HT's appeal

995	Windows NT Server shipments	Unix oblements		
	393,000	535,000		
996*	725.000	602,000		

Source International Sale Corp., Prendigham, Many Complex Tooling and Molding. Inc. in Boulder, Colo. "Given [Unix's] superior systems administration, I fail to see any advantage in using Windows NT instead of Unix

A sensor information systems consultant at an East Coast health care corporation, who requested anonymity, said some glaring gaps remain in Microsoft's scalability initiatives.

"My big issue with Windows NT scalability is not the processing power, it's the I/O bottle necks. We've seen only 5% utilization on a dual-processor Windows NT system, but we experienced a severe bottleneck when the NT File System performed transaction writes to the disk," the consultant said, "So far, Microsoft isn't offering us a solution to the issue.

"Am I sticking with Unix? You bet. We get 17 times the throughput for our large databases running on Unix compared with Windows NT Serv er." the consultant added.

Other users recognized the

intensive environments. It will have built-in transaction processing, a beefed-up global directory, clustering and message

queuing, sources close to Microsoft said. Microsoft will show off a terabyte-size demo of its upcoming SQL Server 7.0 database and fully detail plans for the software, which is scheduled to start beta-testing next month. Micro-

soft hasn't announced a ship Included will be a late-in-thegame addition of 64-bit address ing to support applications that need more than the aG bytes of memory allowed by 32-bit software, sources close to the com-

pany said. Code-named Sphinx, SQL Server 7.0 also is supposed to let asers scale beyond the database's current acoG-byte stor-

age limit to terabyte levels. The product also will add enterprise-oriented features such as parallel querying and built-in data warehousing tools [CW, March 10]. []

Online reality

search through scores of Web sites had yielded one po of a chintry plastic bank, which broke the first time or

a then — probably 1% of my total g in the past year.

on two pieces of news broke: the bank stry of Nets, Inc. and the initial public

ts, Inc.'s fallure was a shock. The



Just because you can buy something andine descrit mean you should.

ning day) but the sobriety of its

en it might make a profit. And its



Freewheeling days to end for 'net providers

\$2,000 for T1 connections to

MCI Communications Corp.

\$6.000 for T3 connections.

citing "hard, cold economi

adopted a policy similar to UU net's in January, peering with as

of the country's larger Internet

service providers. BBN Corp. in

Cambridge, Mass., also peers

with several dozen larger pro-

viders and charges the rest for

Sprint Corp. makes case-by-

case peering decisions. It rejects

requests from providers that

lack the capacity and number of

using its network.

 Major investments required for stable Internet commerce

ECONOMIC REALITIES are closing in on Internet service providers, forcing them to boost their networks to cater to more wealthy comorate customers

To survive in the next five years, analysts say service providers must deliver the same performance and service guarantees that corporations expect from their carriers. Smaller, weaker players are expected to be weeded out

And while users will find more stable Internet moviders. they may also pay higher prices to fewer companies

Analysts say these changes will drive the Internet's evolution from a tool that transports electronic mail to a critical corporate link for remote access and corporate applications.

Corporate America is going to be able to use something stable and solid," said Don Heath president of The Internet Society in Reston, Va.

To support this shift Internet

capacity. One way involves dronping subsidies for smaller Internet providers that dump traffic on their backbone at no cost and have little to offer in return For example, industry heavyweight UUnet Technologies. Inc. a subsidiary of carner LDDS WorldCom, Inc., last week announced at will require some Internet service providers

to ante up to use its network. Providers that can absorb these so-called peering costs are expected to cass them on to consumers, which could put an end to \$19.99 monthly access. And larger providers - by working only with serious players - will be able to better plan network capacity and provide the same guarantees that corporations expect from private line or framerelay service

One of the elite, Fairfax, Va. sed UUnet, which has 50,000 corporate customers and is investing \$30 million in its network, charges about a dozen smaller service providers monthly rates that range from kets at Banc One Corp. in Columbus, Ohio. Dieringer said he is con

cerned about recent network outages that have plagued online services. But he said his company expects to soon get two levels of service from an elite cadre of providers; one that can encrypt and protect sensitive corporate information and another for mainstream E-mail

NOT GOOD ENOUGH James Harns, director of tele-

communications at Warner Larobert Co., a pharmaceutical corporation in Morris Plains N.J., said Internet services will have to improve markedly befor he moves his traffic from a frame-relay network to an Internet-based network

"We don't feel [the Internet] is exchange points to provide a reliable or secure enough," win win situation," said John

WANT TO DANCE?

To peer with Utinet, a optential partner must: 5 Own and operate a dedicated, diversely route notional backbone with 45M bit/sec, or great

- 8 Se willing to peer with Ullnet in at least four
- es across the country. we peering connections of at least 45M bit/sec.
- tain a 24-hour, T-day-a-week r

Moshner, group manager of Inproviders must boost network ternet provider services at Though going public with its

policy spurred accusations that UUnet is trying to squeeze competition, Wen Liao, a senior analyst at Jupiter Communications in New York said "peering" is simply another sign of the commercialization of the Web." That won't abate all concerns,

Reliability concerns the heli out of me," said Steve Dieringer, vice president of emerging mar-

Neither do many other co rate users, said Ronald E. West. president of the Communica-

tions Managers Association m New Jersey "I'm not sure [corporate man agers) can name five fintemet

providers]," he said. "I can name two: BBN and UUNet." With few exceptions. West said, users have "significant concerns about reliability and performance" because more providers lack global presence and experience building net-

'Lite' Windows CE to run on mobile devices

By Mindy Blodertt

THE NEXT VERSION OF MICROsoft Corp 's Windows CE operating system is due in August or September and is expected to

appear in a host of new mobile devices next year. said industry analysts and sources close to Microsoft. Windows CE 2.0, a "lite" ver-

sion of Windows 95, is expected to include DirectX. ActiveX and Comnonent Object technol-

onies and Ethernet handheld PCs, or personal digital assistants (PDA), from a group of vendors that includes Compaq Computer Corp., NEC

Technologies, Inc. and Hewlett Packard Co. Microsoft said when it on nounced the Windows CE last fall that it was destined for many other devices, including palmtops and smart phones Microsoft is expected to an nounce a pocket-size computer system using Windows CE 2.0 at the Comdex trade show in

the fall Code-named Gryphon, the device will look and function like U.S. Robotics Corp.'s popu-

lar PalmPilot, ac-

analysts

cording to industry PalmPilot is an electronic organizer that synchronizes data between the device and laptops

and desktoos. Compaq report edly is working

on such a device. which will run Windows CE 2.0. Microsoft is also working on a vehicle navigational device, code-named Apollo, that would use Windows CE, according to

industry analysts and sources close to the company. Right now, we're looking at CE running on three different platforms in the coming year," said Timothy Schmidt, an analyst at Encore Consulting Group, Inc. in Longwood, Fla. There will be the wallet-size. Palm Pilot-like device, the PDAs

already out there and then the subnotebook-size devices on the horizon -- all using Windows CF " A PalmPilot-like device running Windows CE might be at-

tractive to corporate users We've definitely had interest in the Pilot from our sales force, and a Windows-based device would be even more inter esting," said Jon Sweet, information systems manager

DuCharme McMillen and Associates in Fort Wayne, Ind. "It Windows CE 1.0 runs on would be nice to take informa tion to the client on these little Microsoft officials wouldn't , comment on Gryphon or the next version of Windows CE. Cl

Tools help vintner decant data

Rita Graham at Delicato Vineyards (above) has 90 users posting queries to her data warehouse with a browser-based tool. She jen't alone. Tools that work over an intranet won't replace client/server query tools, but they could empower more users and save you money.

Data Warehousing, page 63

Intel lays out its mobile strategy

By Mindy Blodgett

G ST WEADY for faster notebooks - clocking in at speeds of 200 and any MHz -- and an empha-

sis on MMX laptop processors in the coming year That's according to officials at chip maker Intel Corp., who last week laid out the company's mobile road map for the next

Look for Intel to phase out

HITACHI RATA Systems, Inc. is

planning a new hardware/soft-

ware bundle aimed at speeding

On May 27, Hitachi, in Santa

Clara, Calif., will announce the

Nucleus Series of Intelligent

Storage Subsystems, based on

Courses said the bundle would be useful in situations

where users want faster access

Hitachi will attach its 5700

disk systems to an MVS host via

a special high-speed controller.

Hitachi's 5700 disk arrays.

to their data warehous

up access to data warehouses.

By Tim Ouellette

The new mobile MMX chie will feature:

Speed: 200 or 233 MHz its: Less than 2 hile chies

ed by Digital Equipm

Corp.'s Alpha processor sources said. The Alpha processor

tion and database loading duties

that can normally slow down

But the expense of buying a

new storage system narrow

aimed at a user's data ware-

house means speed gains have to be significant to offset cus-tomers' having to replace their

existing data warehousing set

ups. No pricing information on

Hitachi's announcement was

lable last week, but sources

will handle the data transform

data warehouse queries.

II mobile chips expected to hit non-MMX chips, with Pentium the market early next year, ac-

cording to Charles Carry, director of the mobile and handheld products group at the Santa Clara, Calif. based company. MMX chips - those with multimedia extensions - are aimed at applications such as

full-motion video sales presentations. Carry said the MMX chios make videoconferencing and graphical data sharing via books faster and ensier And although MMX-enabled notebooks cost more than lap-

Hitachi plans fast data warehouse access

Still, some sites may find the deal attractive, sources noted. Hitachi officials declined to

Analysts said storage vendors have been trying to widen the at-traction of their systems beyond basic storage uses by packaging their storage products for specif ic applications, such as data

For example, EMC Corp. and IBM have been optimizing their storage devices for specific rela-tional databases from Oracle Corp., Sybose, Inc. and Info Software, Inc. [CW, March 1]. []

toos with non-MMX processor Carey said volume is expected to drive down prices of MMX

chips Analysts said relatively few corporate users need laptou with the MMX chips. But leff Davis, information systems manager at Spolding Sports Worldwide in Chicopee, Mass., said his company is gravitating

toward MMX chips. "Our sales forces goes on the road with notebooks with CDs. showing presentations like our new television campaigns, Davis said, "MMX is great for

But as for the aoo- and ay-MHz chip speeds on the hori zon, Davis said, "I just can't imagine needing that much speed right now. Of course, that can change, but right now, I find I need more memory on lap

tops, not more speed." But Intel sees the inte of the MMX chip into its laptop line as part of a greater conver gence with the desktop chips according to John Dunkle, an analyst at Workgroup Strategi Services, Inc. in Portsmo N.H. "By next year. Intel expects to not have the long lag times it currently has between desktop

chips and laptop processor an nouncements," he said, Cl

Penthum II. Page 37

LDAP standard seen overtaking X.500

By Barb Cole-Gomolski

MILCH AS PISCOS Warehed the X.400 incssaging standard six cumb to the Internet's Simple Mail Transport Protocol, X.500 supporters may see history repeat itself with Lightweight Directory Access Protocol (LDAP) If X.500, which has yet to take

off in large corporations is overtaken by LDAP as a directory standard, users will benefit from a protocol that was deugned for IP networks and is easier to implement, especially on Monte

"A year ago, the choices were use X.soo or wart," said Dan. Blum, a principal at Rapport Communication, a Washington consultancy. "Bût now users have begun to feel that they can lose the grope with! X roo But the downside of LDAP is



that its directory standard is still in they And whole there is a large crop of X.500 directories on the market, very few prodsucts support LDAP X.500 zealots argue, too, that LDAP isn't up to the task of tracking the complex types of information - such as digital sig-

natures - that future electronic commerce applications will remessaging vendors will use the broad clook of LDAP support to mask their own proprietary

LDAP is based on X 500 and was designed as a front end for X.500 directories. But with the sluggish adoption of X 500 and announcements by dozens of software makers to deliver LDAP-compliant directories. the tide seems to be turning to-

ward the snappser offspring "Microsoft Corp., Lotus De velopment Corp. and Netscape Communications Corp are freally giving users) an open (LDAP) interface to (their) neoprietary directories," said Terry McCarthy, managing director at Neoteric > New York-based messaging consultancy. He said it is unlikely that vendors will "bend over backward to TCompanies likel Microsoft

lare) on a position to say. To hell with all the people who have been developing this [X.500] standard for the last to or 15 years." said Karen Goertzel, a systems integrator in Washing ton who has installed X.500 directories at several powernment agencies. She said Microsoft had to develop an X.500 directory within Exchange as part of the Defense Messaging System contract, yet to date it

has chosen not to make it part of the standard product. From what I can tell, [Microsoft] is not playing in the ballpark; they're building a whole new ballmark." said an architect at a Canadian government agency that is deploying an X.500

And that is OK with some

users. "It's hard to justify a stand-alone directors," said Brian Leonard, a senior business analyst in the emerging technologies group at Carolina Power & Light Co. in Raleigh, N.C.,

which is moving 6.000 users to Exchange. The utility doesn't have an existing X soo directory and is considering using Microsoft's Active Directory Services (ADS), which will ship in the second quarter of next year 'Using (ADS) would be a good way to leverage our investment in Evchange "he said

The LDAP/X.soo assue came to light for Microsoft last month when it told the Electronic Messaging Association's directors committee in Philadelphia that the vendor's ADS will support LDAP 3 and work with X 500 using "as-yet-undefined subsets of the Directory Access Protocol and Directory Systems Protocoll components of X.500. Support for those subsets

isn't expected in the first release

of ADS.D

Webmasters say rules for linking sites helpful

But disagree on who should set the policy

By Mitch Wagner

IT'S AS THOUGH the audience cheered when Darth Vader came on the screen - and then thought better of it. Usually, Microsoft Corp. is the company users love to hate But when Ticketmaster Corn

filed a lawsuit late last month charging Microsoft with using links to steal content on the Ticketmaster World Wide Web site, several site administrators sided with Microsoft. When you put a site up on the Web, they said you are inviting people to

But upon further reflection. several Web site administrators started to waltle. There can be legitimate reasons for not want ing a particular link to a site. mainly if a company finds a site that links to it offensive. Internet commerce executives said. They supposted that the Web needs standard rules for linking, but other observers pointed out that technical tools exist for blocking links to a sife.

We had a situation where a pornography sale was advertising a link to our site," said Cliff

Garden Escape, Inc. in Austin, Texas, which runs a site that nells gardening supplies, plants and seeds. "For whatever reason, the architect of that page. who was primarily interested in permiserative was also enterested in gardening. We didn't want their name associated with our site and we asked them to take

the link off

Sharples, president and CEO of

DISHARMONY INEVITABLE In many cases where sites have attempted to reject links, the site administrators were able to reach an amicable arrangement. But users said it was inevitable that harmony would eventually break down and combatants

would end up in court. The Ticketmaster lawsum nezinst Microsoft myolyes Mecrosoft's Seattle Sidewalk site (seanle.sidewalk.com), an on line directory of activities and information about Seattle. The lawsuit, filed in April, charges that Microsoft misappropriated Ticketmaster's trademarks by linking to Ticketmaster's are at master says it doesn't mind the fact that Microsoft lanked, but

the company objects to the mannet in which the links were nresented. The ticket purveyor

links to pages deep within the Ticketmaster site that it amounted to stealing Ticketroaster's content. Moreover, Microsoft sold ads close to the links, while the links bypassed Ticketmaster's own ads. Microsoft demes any wrong-

doing, saying that promiscuous linking is standard on the Web. Users were split on whether the lawsuit would be good for

"In the virtual world, just like in the real world, you've got to have rules," said Eileen Kent. vice president of new media at Playboy Enterprises, Inc. in Chicase: "A good namy of those rules result from case law."

But David Miller, manager of application development at Office Depot, Inc in Delray Beach, Fla., said the Internet community as better equipped than the courts to make policy. "Saying the courts should handle it is like sayone any answer is better than no answer. That's just not true " be said

For one thing, technology is already in place to block hyperlinks Individual pages can be blocked to links by installing software that changes that page's uniform resource locator (URL). And Internet Protocol blocks can easily be not in place to block out links from specific

Ticketmaster did install IP blocks for the Microsoft site after it filed the lawout, but it said it wanted legal backing to give the blocks more muscle.



Sam Baker, an associate procluded as a special tag in the Hyfessor at the University of South pertest Markup Language code Carolina's Department of where it could be automatically Health Administration in Coimplemented in software but lambia, suggests that users emnot obvious to users bed a special text string - such

as "polink" - in URLs to judi

cate pages they don't want oth

ers to link to and making it a

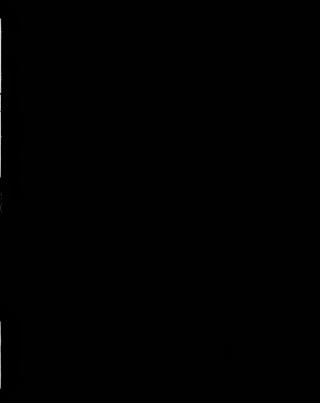
misdemeanor to link to those

pages. Other users agreed but

said the text string should be in-

"Whether or not people rould respect it is another matter, but I think that's exactly the kind of grastroots action and technical solution that goes some distance to solve the prob-

lem." Kent said. O



LDAP standard seen overtaking X.500

By Barb Cole-Gomelski

MUCH AS USEAS watched the X400 messaging standard succumb to the Internet's Simple Mail Transport Protocol, X500 supporters may see history repeat itself with Lightweight Directory Access Protocol (LDAP).

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on cleents.

"A year ago, the choices were use X,500 or wait." said Dan Bhum, a principal at Rapport Communication. a Washington consultancy. "But now users have begun to feel that they can lose (by going with) X,500."

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the "Companies that Microsoft poor lare] in a position to say, To be lared as with all the people who have been developing this JX-you and standard for the last 10 or 15 for years," and Kerne Geertzie, is the systems integrator in Washingsand ton who has installed X-you of directories at several government agenties, the said Microsoft within Exchange; and office of the directory within Exchange; and of the Defense Messaging De Systems contract, yet to date in

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IT'S AS THOUGH the audience cheered when Darth Vader came on the screen — and then thought better of it.

Usually, Microsoft Corp. is the company users love to hate. But when Ticketmaster Corp. filed a lawsual late last month charging Microsoft with using links to steal content on the Ticketmaster World Wide Web site. several site administrators sided with Microsoft. When you put a site up on the Web, they said, you are inviting people to link to it.

But upon further reflection, several Web size administrators started to waffle. There can be legitimate reasons for not wanting a particular lank to a size, mainly if a company finds a nite that links to it offensive. Internet, commerce executives said. They suggested that the Web needs standard rules for linking, but other observers pointed out that technical tools exist for blocking links to a size.

"We had a situation where a pornography site was advertising a link to our site," said Cliff

Sharples, president and CEO of Garden fiscape, Inc. in Austin, Texas, which runs a rise that sells gardening supplies, plants and seeds. "For whatever reason, the architect of that page, who was primarily interested in promiscauly, was also interested in gardening. We didn't want their name associated with our stile, and we asked them to take the link off?

DISHAMBOONY INEVITABLE
In many cases where sites have
attempted to reject links, the site
administrators were able to
reach an amicable arrangement.
But users said it was inevitable
that harmony would eventually
break down and combatants
would end up in court.

The Telemanere beruit against Microsoft involves Microsoft Seattle Sidernalk site (seattle.sideralk.com), an on-line directory of activities and information about Seattle. The lowestic, filed in April, charges that Microsoft misappropriated Teletransier's trademarks by Jaulang to Teletransier's are www.teletransier.com. Teletransier with the company objects to the manner in which the links were pre-

ted. The ticket purveyor

blocks can easily be put in place to block out links from specific sites.

Ticketmaster did install IP blocks for the Microsoft site after it filed the lawauit, but it said it wanted legal backing to give the blocks more muscle.

claims Microsoft had so many links to pages deep within the Ticketmaster site that is amounted to stealing Ticketmaster's content. Morrower, Microsoft sold ads close to the links, while the links bypassed Ticketmaster's own ads.

Microsoft desites any wrongdoing, raying that promiscious linking is standard on the Web. Uners were split on whether the lawsuit would be good for the Internet. "In the virtual world, just like

"In the virtual world, just libe in the real world, you've got to have rules," said Eileen Kent, vice president of new media at Playboy Emerprises, Inc. in Chicago. "A good many of those rules result from case law." But David Miller, manager of application development at Of-

But David Miller, runnager of application development at Office Depot. Inc. in Delary Beach. Fla., asad the Internet community is better equipped than the courts to make pokey. "Saying the courts should handle at is lake saying any answer is better than no answer. That's just not true." he said. For one thing, technology is

already in place to block hyper-

links. Individual pages can be

blocked to links by installing

software that changes that

page's uniform resource locator

(URL). And Internet Protocol

Sam Baker, an associate professor at the University of South Carolina's Department of where Health Administration in Golumba, suggests that users embed a special text string — such at "nosink" — in URIs to induwould

care pages they don't want others to link to and making it a musdemeanor to link to those pages. Other users agreed but said the text string should be in-

cluded as a special tag in the Hypertext Markup Language code, where it could be automatically implemented in software but

not obvious to users.

"Whether or not people would respect it is another matter, but I think that's exactly the kind of grassroots action and technical solution that goes some distance to solve the problem," Kent said. II



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Softwo

Despite client/server push. IBM enhances **DB2** for mainframes

By Tim Ouellette

nology and Java client access to DB2 data (see chart). SVAN AS IAM Strains to WOO DB2 has long been the dominant mainframe database, but nearly all the action these days

which will include object tech

database users to DBs on the various client/server platforms. Bug Blue still aims to please is in the client/server database its bread-and-butter mainframe market, where DBa has compar market. atively little presence

Still, mainframe DRa licenses Version s of DBs for OS/100. grew 4% last year and 8% in the with improved system availabilfirst quarter this year, according ity, client/server integration and to IBM. Currently, 8,000 main-Net.Data, a new World Wide frame sites use DB2.

Web-based data access tool. IBM officials last week also T JUST YET But according to users inter-

gave attendees at the International DBa Users Group conferviewed at the conference, most ence here a glimpse of future versions of mainframe DRs. DB2 shops are still migrating to Version 4 and won't upgrade

DB2 for OS/390 Version 5 to 320 processors and 64,000 c June 1997 Net.Date eb-to-DB2 access tool O3 1097 SAP R/3 for OS/39 DB2 Version 5 optimized as an R/3 database server ert and Java-based access to

And IBM has made a strong

DB2 FOR OS/390 PLANS

increasingly leery of faster up case for users to keep pace by grade schedules among soft optimizing DBa for IBM's ware, hardware and operating mainframe clustering technology and opening up the data-base to client/server applica-One of the few early users of Version 5 said IBM has retired tions such as SAP AG's R/L same headaches for users who must manage new and older LWAYS THERE

right away. Mainframe users are

more easily than different ver

ministration at Hewitt Associate

that the Internet is the land of

milk and honey, and then

there's the reality that we're

sucking the hot

tom of the bowl."

It's not that

ciates, Inc. in Lincolnshire. Ill.

systems [CW, March to]

DB2 databases during migra-Version 5 gives users some nice improvements in continu-ous availability," so users can "The good news is (that versions 4 and 5] can coexist a lot share the same data set at the same time, said John Campbell, sions could before," said Sandy a consultant at Cambridge In-Smith, manager of database ad-

formation Technology Ltd. in In Version 4, not maile everything was in place yet," Camp

Smith agreed. "When you lose connection to the syspi [mainframe cluster], now DBa will recover automatically so you don't have to manually inte vene," which saves time and labor, she said

Client/server int cludes direct TCP/IP access, smoother delivery of mainframe DBa data to client programs and a DB2 Database Server for R/3. which requires Version 5 Those changes could give DBa a higher-profile role in client/server installations. D

Amazon.com braves Internet jungle Successful IPO doesn't mean the honeymoon won't turn sour

By Mitch Wagner Nets. Inc. in Cambridge, Mass. "There is still the perception The business-to-business mar-

SVSN AS Wall Street wasted enketrer, which was headed by forthusiastic last week about the initial public offering of Seattlebased Amazon.com, Inc., some users and analysts expressed concern that the company is destined to become the latest

victim of Internet hype. The initial public offering (IPO), which is littered with potential obstacles to success. ruptcy filing two weeks ago by

mer Lotus Development Corp. CEO Itm Manzi. WER-BASED simply ran out of COMMERCE Both online start ups illustrate the mistaken notion that the Internet is a get-rich-quick

"I think the hype is too high," said Josh Tretakoff, manager of

alternative media at Sharper Image Corp. in San Francisco.

there isn't money to be made on the loternes, internet channels can provide less emensive fast.

er and more convenient ways to communicate with business But like any business venture.

those oew channels require

time, money and staffing to ex-"It's shifting channels, It's

shifting media. It's not changing business," said David Miller, manager of application development at Office Depot, Inc. in Delray Beach, Fla. "The amo of paper that pets sold in the United States probably won't change. The amount of books that get sold isn't going to double just because these guys are online. This is not going to revo-

nize the world overnight. To be sure, Amszon.com did well in its IPO last week, raising \$54 million. The IPO price was \$18, but the stock opened Thursday morning at \$29.25 before drifting down to \$23.50 at

the close of trading. The company has seen boom ing growth, with sales of \$15.7 on last year, up from Sc11,000 in 1995 after opening for business in July of that year,

according to the prospectus. But the prospectus also revealed problems. The company lost \$5.8 million last year and \$303.000 in 1995. Losses will continue into the foreseeable for ture, the company said.

Among the weaknesses cited in the Amazon.com prospectus were inefficient systems - World Wide Web servers were disconnected from back-office systems - and inad equate disaster-recovery plans and insurance.

And despite the hype about

on the Internet the cost of calco for Amazon.com are high. The company keeps only 22% of sales after paying suppliers, salaries and other costs, compared with 16% at Rarmes & Noble Inc. and 27% at Borders Group

Barnes & Noble opened its Web site last week, and Borders said its site will be online soon.

NLY ON THE WEB

"And still you have a bunch of ole who say this is fantastic and let's invest?" said analyst Bruce Guptill at Gartner Group, Inc. in Stamford, Conn. "Isn't this a great country? If you went into any underwriter's office in the world and put together a business plan like Amazon's but without the words 'Web' or 'Internet' in it. I don't think they'd

give you the time of day." Nets, Inc.'s vision was to be a clearinghouse for business-tobusiness commerce on the Internet. Following the once-popular "virtual mall" model, suppliers would sign on to the service to find themselves all in a single location with a commo front end. Users would log in to source products and compare

prices and feature The company filed for Chap-ter 11 protection and laid off 200 workers two weeks ago. It retained about 15 people to keep ies Web site running at www. industry.pet while executives sought to develop a plan for survival through reorganization. O

The laype of doing business on the internet is giving way to reality

apectation	Reality
sternet connectivity is free,	It costs \$2,000
ardware and software are chean.	Low-nower char

Salespeople will disappear as the internet puts manufacturers in direct contact with customers.

Big and small companies can compete

There's no need to advertise.

er month for a TI line. op systems lack sufficient throughput fo or many Web sites. They also Manufacturers don't know what to do with

customers. They still need salespeople to conduct sales. Big companies have more staff and more

customers. They also have more money for equipment, marketing and ads. With 1 million .com domains, a Web site can get lost. Advertising and marketing are

the low cost of doing business

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Distributors find 'net niche

▶ Point-of-sale data, catalogs open new channels

By Justin Hibbard

DOOMSATERS ONCE counted sholesale distributors among the middlemen that the Internet would wipe out. Now wholesale those predictions by turning the Internet into another distribu-

tion channel. Authors and consultants have COMMERCE with multimedia designer Insuch Group, Inc. in manufacturers will use the In-

ternet to reach customers directly and bypass traditional distri-bution channels. To be sure, some manufacturers have beeded the call. Dell Computer Corp., for example, claims to sell \$5 million to \$7 million worth of goods to consumers each week through its World

Wide Web site. But rather than taking the threat lying down, distributors are using Internet technology to provide new services to cusomers and suppliers and thereby ensure their place in the 5,000 to 6,000 titles in a store,

emerging Internet-based supply

For instance, Handleman Co., a music distributor in Troy. Mich., introduced in February an Internet service that lets constributors are wiping out sumers listen to samples from a database of 50,000 CDs and purchase titles online. The company entered a joint venture

> San Francisco, which spent \$10 million and six years developing Handleman plans to give re-

tailers in-store kiosks that will let customers access the system over the Web.

CATALOG HEAVEN "All of the sudden, (the retailers) become catalog killers with

50,000 titles available in the store," said Dan Whitt, vice president of marketine at Han-

Music retailers normally carry

most catalogs. The kiosk can increase retailers' selection without increasing their inventory. and music suppliers get to sell a broad selection of titles that don't usually sell in stores. Consumers benefit by being able to listen to music before they

buy it. In the food industry, Minneapplie distributor Nash Finch Co. is considering rolling out a service next year that would let customers buy groceries over

the Internet from home or "If consumers can deal with handling their groceries at their ence in their home [then] we extend the distribution

xess to the home," said Alex Stegman, director of data processing at Nash Finch. The service wouldn't bypass Finch supplies with food.

the grocery stores that Nash Rather, the grocers would re-ceive orders placed over the Internet by costomers and deliver the food that customers order online. In addition, grocers and

appregated point-of-sale information gathered over the Internet by Nash Finch to target their marketing pitch at specific con-Providing sales inform

is one of the chief services that will keep distributors in business in the age of the Internet. according to Beth Enslow, an analvst at Gartner Group, Inc. in Stamford, Conn.

"Most distributors have gotten really good at operating their warehouses," Enslow said. warehouses."

"Now, they have to get really good at operating their data To survive, Enslow said, dis tributors will have to become outsourcers, collecting information about demographics, inventory and sales that suppliers and

customers don't have the resources to collect. In such a business model, the role of the information technology department changes.
"Suddenly the IT department

that was very low on the list of priorities for distributors becomes very high on the list," Enslow said. []

Standards? What standards?

Most companies don't closely follow their own unities standards for acquiring hardware and software, accord-ing to a study released by Rosemont, III-based Coming to a study released by Rosemont, it cleans Con-cinco, Inc. Althorphy offs of the surveyed engentamine indicated they have written guidelines for purchasing deathep configuration, only 95% showps follow those guidelines, possibly raising their cost of precument. The tudy glid showed that companies that clearly fol-low guideline tend to support fewer standard deathop configurations. Almost half (g/7) of organizations with three or four standard configurations reported followsidelines more than 90% of the time, while 40% ing guidelines more than 90% or the time, wome que of those with five to nine configurations don't follows:

E-commerce charges forward

The Secure Electronic Transaction protocol for proce ing payments on the internet took a step forward last week, as MasterCard International, Inc. in Purchase. N.Y., and Visa International, Inc. in San Makee, Calif., tapped CartCa, Inc. in New York and Spyrus in San Jose, Calif., to provide key infrastructure components. CertCo and Spyrus will build repositories of electronic signa-tures to help authenticate that users are whom they

SAP goes retail

SAP AC is going after the retail market with a vertical offering for the industry. The German software giant's Retail Information System product comes preconfig-ured for retailers and includes sourcing, planning and

tronic commerce, inventory and point-of-sale sy Pricing varies. The product is available now.

Power Mac gets PC emulator

Connectix Corp. this menth is expected to ship its or lation software for the Macintosh that lets users run PC-based business applications on their Power Macin PC-6486 Dishares apparations on their vocations of and Next Software, Inc.'s OpenState, Connectar Virtual PC is a Madicalesh application with all the elements of a Pentium MMX PC rotating in software, according to the San Matter, Calif., developer, When users run Virtual PC, they have the capability of a PC within a Macintonia application, and no additional hardware is required. stalls about pricing weren't available.

BT/MCI merger advances

The proposed Sao billion merger of British Telecom-munications PLC and MCI Communications Corp. won antitrust approval from European Union authorities last week; U.S. approval depends on the results of a to BT's dominance of the U.K. telecommunications

Feds eve digital standards

The federal government may broaden the types of tech-nologies it uses for its Digital Signature Standard, ac-cording to the National Institute of Standards and Techlogy (NIST). The institute is seeking comments on nether government agencies should use algorithms

rtic curve. Com nts can be E-mailed to fips lipsic curva. Comments can be E-mailed to figs-156 girlst.gov. 1877 date somessized plants to develop a federal standard for public-lay cryptography within the powernesser. That would require carabilishing an infra-structure that lats anyone who receives an encoded document use the sendor's public by to help decrypt that document. Such a document is encryptate by using

HP earnings disappoint

Hewlett-Puckard Co. last week blamed a stagment Euro pean economy and a strong U.S. dellar for its lacklaste performance in its second quarter ended April 30. The company also pointed to falling prices for printers and PCs and week demand for its high-and computers as resease for the disappointing performance. HP earned \$784 million, or 75 cents a share, on revenue of \$10.34 billion, compared with earnings of \$723 million on respo Million, compared with summings of \$723 million on reu-nua of \$9.8 billion a year ago. Analysta had expected the company to earn about 80 cents per store. Revenue growth at 4,7% and order growth at \$% idea were much lower companyed with figures for the same period a year

TORY TAKES Nevell, Inc. efficials last week con-med delays in The Jefferson Project, software for pubremote coways in the jamenon respect, activates for publishing documents strend in the company's CrospWise moreaging systems to the World Wide Web, it will reach beta testing in jour.... IBM's strend principal publishin in San Jose, Callf., but vaulx announced the Townhotz yCS, a lipstop companier with other hand to the townhotz yCS, a larget publishing the companier with other than the companies of the three t

"You Won't Believe What We're Doing With COBOL."



Citicorp technology chief steps aside

COLIN CROOK, the Citicorp senior technology officer who masterminded the bank's global technology architecture, has announced plans to leave the bank late next month.

A spokeswoman at the New York-based bank said that Crook, 55, was stepping down for personal reasons and that the bank is searching for a successor. But sources close to Citicorp said they believe the well-respected Crook was frustrated by a power shift at the bank

oman at the New York- after Citicorp recruited several superstan operations executives in recent months One of those is Mary Alice Taylor, Citicorp's executive vice president of operations, who joined the bank earlier this year from Federal Express Corp. Crook "is like [AT&T Corp. Chief In-

formation Officer Ron) Ponder - he was out off at the knees," said one high-ranking information technology professional But most banking insiders speculate

that Crook, who helped found the Smart Card Forum, is leaving on his own terms. "I don't think anybody pushed Colin out," said Art Gillis, a friend of Crook's and president of Computer Based Solutions, Inc., a Dallas-based banking consultancy. "He saw too much competition too many people stepping on his bound-aries, and figured he didn't need the frus-

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tration anymore."

Crook has a different explanation. "My wife had cancer a couple of years ago. I reached sy learly-retirement age at Citicorp) and wanted to devote more time to my personal life," he said.

Crook dismissed the notion of a power

struggle with Citicorp's new operations executives. Citicorp Chairman John S. Reed told Crook about the hirings about a year ago, around the same time that Crook broached his retirement plans to Reed. The hiring of the operations executives created "no pressure at all," said Crook, whose immediate plans after retipement are "to relax a bit."

Crook is a career technologist but was a banking industry outsider when he joined Citicorp in 1990 from Data General Corp. He was recruited by Reed, a former Citicorp technologist who rose to the top ranks. Crook's mission was to provide an outside-the-box approach to echnology, analysts said

Citicorp 'didn't want any preconceived notions about how things were done in the banking industry." Gillis said. "Then wanted a revolutionary guy, and [Crook] was that guy.

That explains why Citicorp still lacks a World Wide Web-based banking product, unlike competitors such as The Chase Manhattan Bank Corn, Crook has been an outspoken critic of the security dangers of the Internet. But supporters said his accomplish-

ments at Citicorp speak for themselves Industry watchers said Citicorp's global technology standardization push in the early 1990s set the benchmark for banks and other companies. The success of the project, analysts said, could be measured by the minimal impact it had on Citicorp's customers - not to mention the millions it saved the bank in reducing its far-flung technology support costs.

Crook "made an outstanding contribu

tion to helping Citicorp manage a huge technological infrastructure," said Diogo Teixeira, president of The Tower Group, a Newton, Mass.-based consultancy.



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Middleware targets online sales

▶ Would eliminate need for legacy applications to be rewritten for the Web

By Shares Goodin

NEW MIDDIAWASE technology is expected to slash the time it takes companies to start doing serious business over the Inter-

IBM last week was first out of the vendor gate with Component Broker Connector and Toolkit, middleware products that cumbine transaction pro- months.

messag ing. application development and management in one package. That robust collection of services should ly easier and faster for customers to place orders, check shipments and inventories

Sun Microsys terns, Inc., Microsoft Corp., BEA Systems, Inc. and Hitachi Computer Products, Inc. are a few of the vendors expected to unveil similar products later this year, although no specific delivery dates have been set.



"At this point, we're anticipating two to three years to get database inquiry information available on the Web to do business." said Kalman Shore, assis tant director of information services at Michael Anthony lewelers in Mount Vernon, N.Y. If (this maddleware technology) did work, it probably would cut

that time down, maybe to

With this emera ine class of middle ware, legacy applications wouldn't need to be rewritten or ported. The middleware, which sits between clients and the servers. anold direct trans. actions to the cor-

It also would add mission-critical services such as security, management and interoperability.

many Internetications lack Users and analysts said that combination of functions could eliminate the need for informa-

tion technology departments to cobble together connections and applications. That process proerally accounts for about 70% of

"It would be crazy for us at Swiss Bank to spend our time rewriting legacy applications," said Jan Malnas chief technology architect at Swiss Bank Corp. in Basel, Switzerland. "We need the glue to make them all work together and make them work over the

Swiss Bank will bets-test IBM's middleware product this summer. Component Broker Connector is slated to ship in September ICW, May (2).

SATISFYING CUSTOMERS At Banc One POS Services rect application or Corp., the electronic payment division of the third-largest conditional increas in the ILC IT managers are driving to keep no with customers who are clamoring to use their PCs as their personal banks. High octane middleware might be the which

> "In the past, we wouldn't have allowed customers to come in to our system. The primary interface with them has been

Businesses take slow road to the 'net

Today, many businesses are swamped with other authorse projects or are too leary of the amount of work invelved to start doing elso

Even by 1999, only 22% of businesses are expected to be doing ness over the Web, according to a survey by The Standi

To do business over the Web, a company usually takes existing oplications — whether mainframe, two-tier or three-tier — and rites them or ports them to the internet

Porting means the legacy application needs to be wrapped in ob-ject technology, and then a graphical user interface has to be bellt for it. After that, developers need to make sure it has the proper so-

companies, and many wears say porting is just too painful.

"People struggle to get their applications up on the Web, but
they haven't thought of all the fundamentals, and their discotrous," said Karen Boucher, director of The Standish Grov you have a hed application or a bad connection, and you re a had application or a bad connection, and you less a or's order or foul it up, they're not coming back."

Web. But finding someone with the skills to do that is expensive over the telephone or in a branch office," said Steve Dieand difficult ringer, vice president of emerg ing markets at the Columbus. With the right kind of middle Ohio-based bank. We want to give our cust

ware, he said, he would be more able to institute electronic cusers online detailed lists of tomer programs. For instance. checks, various account balthe bank's credit-card users ances interest rates. When you could get automatic discounts at can have a Web front end and certain restaurants or stores insteed of having to use paper coucan get into a company's back end easily, that's going to pons. C



Informix, IBM ante up for parallel transactions

Database revamns take aim at Oracle

By Craig Stedman

INFORMIX SOFTWARE, INC. and IBM are revamping their rival parallel databases so the softmore month ha isset for decrease. support anymore.

Both companies plan in the second half of this year to ship releases that add features needed to run transaction-processing ations on their d Oracle Corp. already has

transaction support in its Oracle Parallel Server database, but Informix and IBM limit their current parallel software to data ousing uses.

The luce for users is the ability to run big client/server applications on a single parallel server or across a cluster of systems. Parallel databases split workloads among multiple processors, which should make it possible to scale applications into higher over and data realms.

es wordt hait work for end users. Informix "is clearly moving in the right direction" by addressing the transaction processing side of the equation

man Estates III

Improved support for things such as database recovery and Sears wants Informix to "bring in line transaction-processing capabilities and data warehousing fea-

application. DeWitt said.

answer

fures in the same database " - Ken DeWitt, vice president of

credit information systems

restarts also could pay dividends with its OnLine XPS database. said Ken DeWitt, vice president in the data warehouses, he said of credit information systems at For marketing or risk manage-Sears, Roebuck and Co. in Hoffment organizations, the data warehouse is their production Sears uses XPS to run data

systém." warehouses with more than aT Informity in Menlo Park bytes of customer and product Calif., is working on an XPS rewarranty information. It relies lease that will take transactionon Informix's mainstream Onoriented features from Online Line Dynamic Server for client/ Dynamic Server and build them server transactions, but the parin to the parallel database. In-

allel features of XPS should cluded will be more complete boost performance by taking ad support for things such as vantage of more processors per stored procedures, triggers, referential integrity and data-locking mechanisms, said Brett Bachman, peneral manager of

change everything," he said.

enterprise products at Informix IBM officials said paralle poort for similar feats res will be added when IBM's DB2 Universal Database is released in the third quarter. That product combines the multiprocessor version of IBM's client/serves database with DR2 Parallel Ediben, which is optimized for data

warehousing uses now. Oracle uses a less complicated interconnect approach and has been able to move ahead faster on parallel database development, said Dan Kusnetzky, an analyst at International Data Corp. in Framineham. Mass. But Oracle Parallel Server's architecture "can be a performance bottleneck," he said. [3]

Parallel detabases for HT

MONY folds CSC outsourcing deal

THREE YEARS into a services agreement that pever fully materralized, Mutual of New York (MONY) has terminated its seven-year, \$210 million outsourcing agreement with Com-puter Sciences Corp. (CSC). A spokeswoman for the New York insurer said the "mutual agreement" to terminate, effective last week, was based on MONY's plan to rebire the information technology

Secundo Califabased services firm and create a new technol-But analysts claim MONY was unhappy with the results of the contract, which was designed in part for the firms to pursue services business from other insurance companies. The venture never took off, and sources said MONY soured on the partnership after CSC's

staffers outsourced to the El

April 1996 acquisition of The Continuum Corp. [3] - Thomas Hoffman A new data warehouse performance standard has been set by Informix. We increased query speeds by 70%* in our most recent

TPC/D henchmark. Our 3416 QppD represents an exponential leap in performance. That means faster access to the information

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Oracle, so you can interrate the information you need as it becomes available. And look at the ovice/poof oracle.

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warehousing, hut you did give us something to shoot at. www.informix.com

MINFORMIX"

Data Warehouse Performance Comparision						
Product	Power (Qppd)	Load Time	Number of Processors	Price/Performance		
INFORMIX-OnLine XPS	3416.4	7 hrs. 47 min.	48	\$3,607		
Oracle 7	2009.5 (70% slower)	15 hrs. 9 min.	64	\$3,312		
. Teradata	1501.1 (125% slower)	14 hrs. 36 min.	160	89,374		

^{*}Based on OppD0900CB as of U197, QuiD0900CB of STOT (available) description 15%. Residence configurations. INFORMET Online Extended Parallel Server of \$4.50 mm ras on MF E7522 or 2,664 0 QupD0900CB. 1,472 QuiD0900CB on 6797 (available) done 18/197). Overlin 7 5.5 was ran on 5 on three Enterprise 10000 at 2,000 5 QupD0900CB, 1,161 0 QuiD0900CB and \$17,200 QuiD0900CB on 187.000 QuiD0900CB on 187.000 QuiD0900CB.

Netscape dawdles

▶ Late delivery of its Communicator client will put firm behind Lotus, Microsoft in messaging

By Borb Cole-Gomelski

NETSCAPE COMMONICATIONS Corp., already late to the messaging party, will now be even later. Its Communicator groupware client is overdue, and its Messaging Server 3.0 is still in beta

testing, which means Netscape faces an uphill buttle to catch Lotus Development Corp., Microsoft Corp. and Novell. Inc. Netscape's nitch is that its products, built on Internet Protocols, will be less expensive and better integrated with IP networks than its competitors' proprietary offerings.

WHAT'S HERE HOW

ough that strategy reso with users, Lotus and Microsoft in the post six months have shipped upgrades of their mail servers that boast improved intermet hool

'I really like what [Netscape] is doing (in terms of message ing), but we make decisions based on products we can get our hands on," said Paul Rarey, a systems architect at Cloros Services Co. in Oakland, Calif. A few months ago, Rares looked at migrating users from

Lotus CC Mail to Netscape Mesaging Server, but he picked Lotus' Domino because Messaging Server hadn't been betatested. The product is expected to ship next month on Unix and in July on Windows NT. Analysts said winning a spot as a top messaging vendor is key

to Netscape's long-term success. Whereas the first wave of (corporate intranetal mostly involved publishing information on the World Wide Web, the next wave is going to be all about collaboration," said Gary Rowe, a principal at Rapport Communication, a consultancy

in Washington International Data Corp. in Framingham, Mass., estimated Netscape had 5.5 million mail seats at the end of last year. compared with a million for Microsoft Exchange and more than o million for Notes But what those Netscape seats have for E-mail is what is already built in

to its Navigator browser. Communicator, client software aimed squarely at the Notes client and Microsoft Outlook, was slated to ship in the first quarter but now is expected by the second quarter.

> tion future is a severe lack of expertise. Consultants, field engineers, trainers and help desk staff are scarce and sometimes qualified, users complained Blue Cross/Blue Shield of North Carolina, for example,

hopes to roll out TME to in nine months with a dedicated staff of seven backed by three consultants from Tivoli's Professional Services group. Assuming they can get those helpers, that is still aggressive and optimistic schedule," acknowledged Harry Acynolds, vice president of IS at

the insurer's Durham head. Indeed. TME to implementation can take two years or longer

even with expert on-site help. And TME to adopters face a wait of six months or longer for those consultants, leaving other service providers scrambling to fill the exp.

"Fewer than to cost of 2 100 in our consulting and field support groups are up to speed on TME 10," said Joseph Ambrose, technical architect at the con sulting and systems integration

scape when he learned that

end users had to run the addi-

tional Communicator desktop

software to leverage the mail

server's groupware capabilities.

J. S. Sullivan, product manag

er for Messaging Server 3.0. at

Netscape, said the company is

already a contender in this

space. "We have millions of

company's recent acquisition

of Portola Communications in

Palo Alto, Calif., will give Net-

tion. Portola was building o

highly scalable, standards-based

scape an edge over the compe

pong support" as those pe

Synchronization is so slopps

version of the tool, "which

We're caught in the torsa do." said Frank Moss, presi

of Austin-based Tivoli. "We're

no longer pushing the product

[or] in control. Customers are

Treoli's support staff has

grown from 50 to more than

soo, but that ign't enough to

keep up with demand, Moss

said. IBM has authorized "an

unlimated budget to hire, train

and deploy support staff," he

said. He added that he hopes to

You can't just throw mo

at the support problem," said

Walter Campbell, a systems ana-

lyst at Phillips Petroleum Co. in

Bartlesville, Okla., "because it

takes time to gain expertise."[]

their schedules may suffer.

But users said they worre that

catch up by midvear

would really mess me up."

Sullivan added that the

users," he said.

said D

ucts trans

oli control

pulline it now.

Industry analysts said they Park Service's short list, alone arro't surprised that Netscape with Microsoft and Lotus, when appears to be struggling to delivthe agency was looking to miet its enterprise messaging grate about 15,000 users off CC:Mail. Lewis soured on Net-

"Building a large-scale messaging product is a lot more involved than most vendors realize," said Rob Enderle, a semon analyst at Giga Information Group in Santa Clara Calif Enderle pointed out that after more than four years of development, Microsoft shipped a version of Exchange that failed to meet the expectations of some

large users "Netscape is moving into some deep waters with companies that have very deep pockets." said Jonathan Lewis, a computer specialist at the National Park Service in Ventura, Calif

Netscape showed up on the

arm of Computer Science Corp. Clouding their implementa-(CSC) in El Segundo, Calif. About there-fourths of CSC clients that seek belp with enter prise management request a comparison between TMF to and the Unscenter TNG (The Next Generation) suite from Computer Associates International, Inc., Ambrose said. The rest have decided to make "the half-a-million-dollar commitment to TME to " he card "but then they are all dressed up with nowhere to go."

LACK OF TRAINERS Pinding competent trainers has

been a pressing problem for Mark Middendorf, infrastructure manager at the foods division of Cargill, Inc. in Minneanolis "We're here looking for good instructors and trying to fly

them in to teach our operate on-site." Middendorf said at the user conference. Few classes are available, class quality has been uneven and Tivoli's experts have been too busy, he said. A related issue, com-

users of IBM tools, is "ping-

Compaq delivers

By Mindy Blodgett

COMPAQ COMPUTES COSP. OF ficials last week said the company has remedied problems in the most recent shipments of its Armada 4100 notebook line. and users who have faulty lantops can obtain fixes through a

cial service program Users have reported power management and keyboard problems with the units, according to Ted Clark, vice president of marketing for portables at the Houston-based vendor's PC division.

We have just decided to stop purchasing Compags, this was such an annoying problem

Jon Sweet

DuCharme McMillen Clark said a faulty ROM BIOS

has-caused some of the 4100 messaging system. Sullivan laptops to lose power, and fi nectors to the keyboard have disabled some keys. Compaq now offers a lifeting tion from IBM to Tiv arranty for its keyboards, and

users can get information on fores through www.compag.com or Heleniak said, that a "fancy by calling (800) 652-6672, showcase release" of IBM stor-Clark said

age management software for TME to actually installs an older

Clark said be doesn't know what percentage of the Armadas, which were first launched last lune, have been affected by the bugs. Gartner Group. Inc., a consultancy in San Jose, Calif. ia poised to release a report that details the failures with the

4100 line, he said. couldn't be reached for comment on the report

Jon Sweet, an information systems manager at DuCharn McMillen and Associates in Fort Wayne, Ind., complained about the keyboard problem in the Armadas.

You are typing, and then it seems to lock up - no typing appears on the screen," Sweet said. "We have just decided to stop purchasing Compage this was such an annoying problem."[]

Tivoli

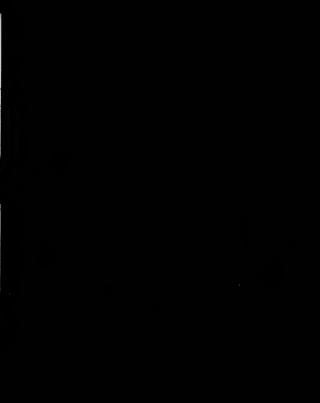
CONTINUED FROM COVER ! works and hundreds of Unix servers at a Lockbeed Martin Corp. site. "Every vendor hits a learning curve when they roll out new products, but right now, this is a big mess."

So much so that analysts at Meta Group, Inc. in Westport, Cons., recently warned clients to consider Tweli's madequate support resources when they plan TME to deployment.

As a result, recent adopters of TME so tools swarmed the few erts found at Tivoli's four day user conference here last umek tion systems manag-

ers and staffers said they are hungry for help because the IBM subsidiary can't supply necessary support to imthe complex TME. They are committed to this strategic integration of network, systems and application management functions to reduce costs and regain central control.

LAPTOPS Armada fix



Bay amends Token Ring

Announces switch, add-ons to simplify, improve net performance

By Bob Wollace

TOKAN RING switching will get a big shot in the arm next week when Bay Networks, Inc. annces products that enal IBM shops to extend the life of shared-bandwidth Token Ring Only 15% of corporate desk-

ops have Token Ring connections, but Token Ring LANs account for about 40% of all mission-critical network traffic, analysts said.

The Santa Clara, Calif., ven-dor confirmed plans to unveil this week a low-cost workgroup Token Ring switch called the

Bay will also announce interface cards that double the mam-ber of Token Ring switch ports that its higher-end Centillion 100 LAN switch can support.

evolved more quickly than Toben Ring switching, as 10M bit/ sec. Ethernet LANs run out of bandwidth before 16M bit/sec. Token Ring LANs.

The planned Bay products will make it less expensive for users to migrate to Token Ring switch ing and enable them to support

larger groups of users.
"We need Token Ring switchng, not because we have any new super high-bandwidth application to roll out but bese we're adding more people to the network and need more bandwidth," said Randy Kitchen, a technical convultant at First Health Corp. in Glenn

Ellen, Va., a longtime Bay cusfour-port cards," he said. Brown wouldn't divulge pricing for the

Ring switch port ship

ight nort cards Bay also plans to thip Token Ring switching modules for its

the third quarter. In the fledgling Token Ring switching market, Bay competes primarsly with Madge Networks. Inc. and Cisco Systems, Inc., both in San Jose, Calif., and with IBM and Xylan Corp. in Calabacor Calif r

and enhancements to its Server Works management suite, as well as StorageWorks storage The company is expected to incurre the availability of Windows NT on its highest-end

AlphaServer 8000 family of enterprise servers. It also plans to see its so-called Fourth Wave of Affinity products that can be used to integrate OpenVMS and Windows NT.

NOT JUST MT But NT won't be the sole tonic at the show

we hope will dominate the show are the several major alliances that Digital has with other vencommore users "that the fruits dors and what all of it is going to of the new warehouse are sweet-

sent, technical and service rela-A pending merger between the tionships with Microsoft Corp., Computer Associates Intern tional, Inc., Oracle Corp. and MCI Communications Corp. For instance, "with CA taking most of the enterprisewide system management (technologies) from Digital, a lot of users are

> Senior executives from each of the companies are expected to address user issues and outline their long-term plans with

Another highlight of the show is expected to be a series of case studies that several compa-

The firms include the California State Legislature, Canadi Tire and Integrity Computing

Warehouse mergers give IS headaches

Several data warehouse manbuilding its own very differen The new plan: Finish merging the two FHP warehouses by thus fall, then figure out how to egrate the combination with

and stressful," said Wolff, direc tor of information access at Cypress. Calif-based PacifiCare Nine of his 15 full-time staffers

have quit since the fall, and four more have switched to other jobs within the health mainte-And it may be even worse for ome end users. As part of a

ness re-engineering strategy, the FHP warehouse merger project is wiping out a repository of daily insurance-utilization records that as many as 550 users had accessed. "There are things they're used to that our ocesses simply don't supnew processes si port." Wolff said

SAME BOAT Warehouse managers at other

acquisition-happy companies are dealing with similar issues. For example, IS workers must out in long hours trying to meld For IS: and warehousing tools atible data models and database desires

different types of information

Token Ring switch to support

annumbers from 20 to 150 users "

end version of its Centillion 100

16M bit/sec. of dedicated band

width to each user in a work

Bay's Centillion 50 15 a low-

The new system can supply

Bay wouldn't discuss pricing

or availability for the switch, but

analysts said it should ship with

Brian Brown, director of

product strategy at Bay's switch-

ing products division, said Bay's

t-port interface cards will

in in the third quarter. He

added that the average price per

port has hovered at the \$100 to

DATA WAREHOUSE MERGER HURDLES

We're a little higher on our

\$600 level industrywide.

in three months

For end upers:

Functions may not be amported to new warehouse # Heed to learn new data

definitions and terms Dutabase design changes force

Il May need to switch query and reporting tools

and table entries such as account numbers and product codes, the managers said. And end users may have to learn new terminology and methods of navigating information (see chart

"We did a full, ground-up restart, and there's going to be a huge learning curve for our users to understand the terms they have to use in the new warehouse," said for Bruscato, an advisory database consultant at Anthem. Inc. in Indianapolis. The \$6 billion health insurance

company, which was formed by a three-way merger in 1995, has been working for 18 months to combine three warehouses into

a single pool of data. To help users prepare for the switch, IS staffers put together a

6-in thick manual with "literal. h thousands" of old and new business definitions, Bruscato

said. Anthem plans to go live with the merged warehouse by istant termi midyear, but the old ones may be left in place until early next and table entry formats year while the company tries to

er." he added. PUT ON HOLD

parent companies of San Diego Gas & Electric Co. and Los Anseles-based Southern California Gas Co. prompted the San Diego utility to put a corporate data warrhouse on hold while nostmerger technology plans are de-

But San Diego Gas & Electric already runs a series of data marts on Windows NT whereas Southern California Gas has a mainframe-based wars

Bringing those together "would effectively require a rewrite, be-cause clearly our whole [approach) for getting data from the production systems would have to be reworked," said Dave Gillespie, supervisor of informa tion management at San Diego Gas & Electric, "It would be a challenge for us."

DECUS

DEC eyes NT link to Unix, OpenVMS

By Jaiksonar Vijayan

THE POCUS of this week's Digi tal Equipment Computer Users Society (DECUS) show in Cincionati will be on Windows NT and Digital's continuing efforts its Unix and OpenVMS environhigh-end System 5000 hub in Dugital will roll out a series of

roducts and services aimed at addressing those issues, including new Windows NT enterprise servers, technical workstations

'Certainly one of the issues

ean to customers," DECUS President Joseph Pollizzi said Digital has major develop

oing to be most interested in aring what they have to say."

corporate executives and analysts with a single view of customers and financial data across a merged organization makes the notion of combining warehouses impossible to resist The situation is "very chaotic

from a business angle But it can be agony for those Take Jim Wolff Wolff spent the past two years trying to com-

bipe a pair of data warehouses in the wake of a corporate acquisition. Then in February, his company. FHP International Corp., was bought by PacifiCare

"There's going to be a huge learning curve for our users to understand the terms they have to use in the new ware-

house." - Jee Bruscate.

Users frustrated by lack of Baan V details Robert States Comprise Residence Comprise Resi

▶ Recent acquisitions keep Dutch vendor busy on integration

By Randy Weston ANAHEIM. CALLE.

UNEAS ARE EXCOMING frustrated with The Baan Co.'s reluctance to release details about Baan V, the next generation of its flagship business process automation

The Dutch vendor, with U.S. headquarters in Menlo Park, Calif., has kept relatively mum while it figures out how

to integrate products from several recent nes Fesler, director of global business systems at Hussmann Corp., s Bridgeton, Mo.-based maker of industrial

igerators, said he is prepared to rearrange his implementation schedule around Baan V's release. Hussmann is on Barn V at

about 40 sites "The prob lem is we can't find out from the Baan

how it plans to interface these new offer-ings," Fesier said.

In response to user concerns, Baan, of-ficials last week said there will be an early release of Baan V in July and a general release at the end of the year. Baan officials said they are confident

they can deliver on time despite the ac-

The latest addition to Baan's portfolio was Aurum Software, Inc. in Santa Clara, Calif., maker of sales force autom and customer service software

Baan announced the Saso m stock swap at its user group conference, which drew about 2,000 people. Aurum was already working to integrate its prod-ucts with offerings from Antalys, Inc. in Golden, Colo., another recent Baan ac-

Amal Johnson, Baan's president of affiliates, and Mary Coleman, CEO and president of Aurum, said they will fur-ther integrate Aurum's offerings with Baan's financials, including pieces from Hyperion Software, Inc., another company Baan purchased, st least as a develop-

Analyst Ed Black at Aberdeen Group, Inc. in Boston said Baan needed to make acquisitions to shore up holes in its prod-uct. He said Rasn's unwillingness to discuss Baan V in detail may be the result of fast growth rather than a lack of coop-

"They are moving too fast," Black said. They had 184% growth (in its) first quarter this year over (its) first quarter

Black said that will affect the pro deases, as Rasn adds new employees to handle the increased load while dealing with integrating third-party products. But Baan officials said the company

dedicated 26% of its 2,000-plus employ ees to the integration task.

Even Baan's most loyal customers, such as aerospace giant The Boeing Co.'s Commercial Airplane Group, feel a bit frustrated, but they realize the need to

Base is being cautious to make sure can to get as much integration it delivers a sound product, said Martin can with the product," he said.

"We share those frustrations, but we know (Baan is) dealing with this at a high level," Richie said.

"They have asked us to step back and let them finish what they need to do. We eve they are doing everything they to not as much integration as they



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COMPAO.

Has It Changed Your Life Yet?

Is Rhapsody too late to enrapture users?

Apple tries to woo Mac developers with Intel portability

By Liss Picarille

APPLE COMPUTER, INC. is trying to re-to run on Intel Corp. platforms.

The Cupertino, Calif., computer maker nouncing that its next-generation Rhap-hopes the scheme to keep developers will

sody operating system will let developers write applications that can be recompiled tosh. Users often abandon the Macintosh platform because of the dearth of applica-

Rod Glidden, a technical analyst at Liberty Mutual Insurance Co. in Ports mouth, N.H., said the insurer in the next

t8 months plans to replace its 18,000 Macintoshes with Intel-based machines. "We found that the development tools

weren't there. The off-the-shelf products ren't there." Glidden said. "Even if Rhapsody came out tomorrow and it was a big hit and developers including us could write applications for multiple plat-forms, it's still too little too late."

Eric Wiegert, MIS director at Bowsermer. Inc., a Dayton, Ohio, engineer

ing and testing firm, agreed. He said Apple's recently announced plans won't help his business today.

Those are long-term goals that users won't see the results from for a year or two," Wiegart said.

He said his company is phasing out the Macintosh in favor of Windows 95 running on the desktop.

The lack of applications and inability to easily support our back-end SQL data-bases forced the move," he said, "This was a business decision. We felt that keeping the Macs was choking our phility

to progress further in our marketplace."

Apple's plan to hold on to Macintosh developers, who are often tempted by the alliane of the huge Windows installed base, is to offer a streamlined method of writing applications on Rhapsody that can be deployed on Windows or and Windows NT systems.

To run those applications on an Intel-bosed machine, users would simply install a version of Rhapsody for that plat-form. Apple also offers developers the

option to include a runtime version of Rhapsody for Intel with their applica-The plan will be implemented via technology code-named Yellow Box, which is the part of Rhapsody that includes sup-port for Java applications and OpenStep

application programming interfaces (API). Developers who write to the Yellow Box APIs, which are exposed as Java language calls, can simply recompile their applications to run on other platforms.

The focus of the software world is not yellow or blue boxes; it is Java. That's what's really going on in the real world," said Tom Rhinelander, an analyst at Forrester Research, Inc., a market research firm in Cambridge, Mass. "Corporations

are investing a lot in the development of Java applications."

Apple demonstrated parts of Rhapso-dy, which is due out in the middle of next oy, which is use out in the institute of treat year, on PowerPC and Intel machines at last week's Apple Worldwide Developers Conference in San Jose, Calif. Cl



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Diorrat, edge your own. Or sing the Webmaster's Lament: "Gee, I guess we should have gone with Diorrat."





IBM OS/2 Warp Server to get Java jolt

IBM DEMONSTRATED Its Bluebird ope ating system add-on - which is optized for Java, corporate intranets and the Internet - at its Technical Interchange conference last week.

Bluebird is part of IBM's ongoing ini- 100% Java computibility will let users tiative to preach the gospel of platform race according to Java, said Mike Lawrie, general manager of IBM's personal software division. The idea is to twince users that OS/a Warp Server is a viable platform because its forthcoming

run any pure Java application on the operating system, Lawrie said. Bluebird, slated to go into beta testing that. The add-on to OS/a Warp Server consists of a client and a set of server-side

Lawrie acknowledged that the "biggest drawback associated with installing OS/a Warp Server has been the lack of applica tions written for the platform." But the promise of 100% Java compatibility, which IBM is just now starting to deliver to top-tier customers, would make that a

moot point, users and analysts said With Bluebird, users can move from a traditional client/server model to a petwork computing environment that in-

cludes Intel Corp.-based managed PCs Lawrie's efforts to jump-start OS/2 are supported by

IBM's Network Computing Projects business unit in Austin, Texas. Its goal is to pro-pel IBM to the orefront of Java

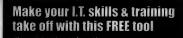
relopment and I sweler DS/2 to assist Fortune 500 OS/a Warp Server accounts in

codeveloping mission-critical Java applications for the Internet. Already, ao customers have Rudi Peeters, an electronic-banking officer at CERA Bank in Lauven, Belgium,

said the bank is the first to launch a Java application on an OS/2 Warp network. Our mortgage loan calculator Java applet running on our OS/2 Warp network puts every one of our bank's transactions online and in real time." Peeters said. It saves the bank money and lets customers immediately see the results of

transactions, he said. Analysts praised IBM's Java initiatives. Frank Dzubeck, president of Communi-cation Network Architects, Inc., a Washington consulting firm, said the ability to as opposed to a mix of Java and another programming language — on OS/Warp Server will be an advantage for IBM.

What makes IBM's strategy so potent is that Windows NT and Windows 95 operating systems can't run Java applets. IBM's quick and comprehensive st port of Java gives it an advantage over Microsoft Corp. that could help IBM garner new customers beyond the traditional OS/a Warp bailiwick in banking and financial shops, Drubeck said. But a com-mitment from Microsoft to run all Java applications on its operating syste would defuse IBM's efforts, he said.



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Year 2000 bugs everywhere?

medical devices and bank vanits The problem is that some sysms outside the data center have embedded chaps, real-time clocks or scheduling programs with two-digit date fields. Those could cause problems when

they lut oo With software, experts can predict with reasonable assurance that 90% of those applications whose year 2000 problems haven't been fixed will fail But nobody knows what percenture of equipment with embedded systems will fail, said Peter de lager, a leading year 2000 expert and president of de Jager & Co in Brampton, On-



"Our resources are already strained on this. I'm not sure we should spearhead work that most year 2000 project expen-

has to be done in other areas "

- Steve Heckler Sony Pictures

But us thus really something IS departments - already scrambling to fix mainframe, midrange and PC systems - should add to their crowded agendus? The answer is yes, according to the yest majority of three dozon 15 executives interviewed by Computerworld

"If we don't do it, who will?" asked Mary Lynne Perushek. vice president of 1S at Norstan. Inc., a Plymouth, Minn.-based data communications rouse ment and services supplier.

Perushek and her staff recently began meeting with managers in Norstan's engineering and telecommunications groups to help them identify and prioritize which

lennium project team is work ine with other departments. such as telecommunications and facilities management, to determine whether the year 2000 date "is a threat to their particular department," said

equipment needs to be examined first, such as internal

swatches and routers At Yankee Gas Services Co in Menden, Conn., the 1S departfacilities management department to identify equipment that could be date-sensitive. The company then contacts the year dors that make badge readers and other systems to incure about plans to make their equip ment year 2000-coropliant, said Scott R. Waleski, director of in-

formation technology and services at the gas distributor. Yet many other IS executives said they don't have the resources to take the lead role. Instead, they are acting as internal consultants to help the facilities management department and

other affected departments "Our resources are already strained on this 1'm not sure we should spearhrad work that has to be done in other areas," said Steve Heckler, sensor vice president and chief information officer at Sony Pictures Entertain-

But the consulting role is working at Central Maine Power Co. (CMP). Like other utilities, it faces the double trouble of fixing its legacy computer applications and the date-sensitive chips embedded in its transformers and power equipment. Because the IS group has the

ence within the Augusta, Mainebased company, the IS year 2000 project manager meets regularly with the facilities man agement team to share projectmanagement experiences, said Rocko P. Graziano a senior business systems analyst at

SETTING PRIORITIES

Besides offering project-management tips, IS managers can also help other departments set priorities. CMP's war 2000 project team meets resularly with its engineering and facilities management representatives to help those groups determane which operations are most critical and must be acted upon

first Graziano said Likewise, BankBoston's mil-Steven McManus, communica-



"If we don't Ideal with non-IS year 2000 problems], who will?"

- Mary Lynne Perushek Morstan

tions manager for the bank's millennium project team From the get-go, we have said that this is not just an IT problem: thus us a business prob-

lem, 'McManus said Ann K Coffou, an analyst at Giga Information Group in Cambridge, Mass., listed the following potential year 2000 problems

■Most elevators have embedded systems that shut down the elevator if scheduled maintenance usn't performed after a certain length of time. If the elevator system interprets oo as 1900. the calculation will be thrown off and thousands of elevators could be grounded

Michael Thomas, executive vice president of Schindler Elevator Corp. in Morristown, N.I. sayd it is true that elevators have two-digit year fields. But he said elevator systems don't make date-entical calculations, so that shouldn't be a problem. Still. many customers are required Schindler to certify that theu elevators will work after the continue collower Telephone systems such as private branch exchanges may not be able to recognize the century change, resulting in im-

proper billing and incorrectly time-stamped voice mail. · Electronic time clocks, securi ty systems, parking lot gates and vaults could malfunction. Testing shows that some far machines will work and some Programmable sprinkler sys-

tems could spurt into action Jan 1. 2000 - sn the maddle of wan ter in many locales - and cause water or we damage

TESTING TIME Meanwhile, vendors that build automation systems, such as programmable heating and airconditioning systems, are busily testing their systems to identify year 2000 problems

Honeywell. Inc. in Milwau kee, for example, is testing its products this year and will make recommendations to users next year, a spokeswoman said. Johnson Controls, Inc. in Milwauker has discovered that its Metasys facilities management system

and is responding to them

plan to address the year 2000,

we request the following infor-

That sounds strikingly similar to the letters IS roanagers are

sending to their software ven-

dors. In other words, customers

want to avoid walking into un-

heated buildings on Jan. 1.

mation about your product.

- with roughly 5,000 users has a two-digit year field. It will be fixed in a software upgrade this year an official said. Some customers are sending formal letters to their building automation vendors, asking

whether their systems can copwith the year 2000, noted Mark Weldy, vice president and general manager at Trane Co.'s Building Automation Systems unit in St. Paul, Minn. Weldy said Trane has received several such letters He said the customer letters tend to begin, "As part of our

U.S. installed hase of appliances and office ent that centains com

Product	1996	1997"	19981	1999"
Fax machines	14.4414	15.63M	16.42M	17.04M
Copiers	7.3M	8M	8.7M	9.5M
Mobile phones**	13.39M	14.4M	15.96M	17.21M
Televisions	214M	223M	232W	242M
VCRs	95M	97M	98M	100M





Sun and Sybase. An allumon founded on a sense of finas, at the first strange, pramer for Sybase, Sun is the company with the most Sybase expenses.

Sun is also the first company to develop a competensive service relationship with Sybase to deliver the ultimate in customer studieston And when
Sybase develops new applications, Sun as the platform they're developed on Which means that you get business solutions

**EXAMPLE OF THE STATE OF THE STAT

with proven technology and optimized performance. The seamlessness between Sun and Sybase is the reason we can deliver the highest quality and best-performing products and services available. But then that's what true alliances are all about. To find out more, contact us at www.sun.com/sepcw.or www.sybase.com. THE NETWORK IS THE COMPUTER.



greet for the properties are all it gives proceed for for the foreigness and deleting and the binaries in the Company are materials as represent motivated at the Micrograms for an disclosured forties and other courses. Species and the following the follo

Computer Industry

Digital sues Intel in last-ditch Alpha bet

 Struggling DEC seeks piece of Pentium action

By Jaikumar Vijayan

DIGITAL'S STARTLING decision last week to sue Intel on 10 counts of patent infringement has sparked a flurry of questions about the company's tactical motive for doing so. Users looking for clues to

Digital Equipment Corp.'s action might find them in the company's struggle to make its Alpha chip a commercial success. Although the Alpha doesn't directly compete with Intel Corp. chips, Digital has placed a lot of eggs in the Microsoft Corn. Windows NT basket and has tried unsuccessfully to win support from some desktop makers, including Compan Computer Corp. and IBM. It is also considered a matter of time before the high end of

the Intel line and the low end of the Alpha line collide. Duntal officials said the company is suing the world's largest chip maker to stop it from illegally using Digital-owned macroprocessor technology in Intel's hugely popular Pentium,

Pentsum Pro and recently announced Pentium II chips. Digital isn't seeking an immediate injunction to stop Intel from selling the disputed chips,

but it wants unspecified but potentially staggering damages from Intel A clearly blindsided Intel late

last week dismissed Digital's claims and said it was fully pre pared to "vizorously defend itself against the sust."

What [Digital] is trying to say is that if Intel hadn't copied our technology, we would have sold more Alpha chips

"What Digital eventually wants to do is stop intel from shipping (chips with the disputed technology), to make the

Alpha more competitive," said Linley Gwennap, editor of the "Microprocessor Report" in Sebastopol, Calif. "What [Digital] is trying to say is that if Intel hadn't copied our technology, we would have sold more Alpha chips," said Tony Massimini, an analyst at Semico Research Corp. in Scottsdale. Anz The suit comes at a time

when Digital is preparing to compete more directly with Intel - in theory at least - on two separate fronts Later this year, Digital will start shipping a low-cost Alpha chip that it is manufacturing

with Samsung Electronics in South Korea. Digital hopes to persuade major PC vendors to incorporate the chip in low-cost PCs that Palmer said last week. will compete di rectly with Intel woes with the Alpha chip have Further down

the road, Depital also will face direct competition from memorando more powerful Intel chips that promise to offer nearly the same kind of performance as some of Digital's Alpha chies. And Intel is working with Hewlett-Pack-

1000

LEADER OF THE PACK ard Co. to develop a new chip archaracture called IA-64 that is In terms of raw performance at expected to be a peer of Alpha least, the Alpha chip has been when it is released in early streets aheld of the competition, including Intel, since it

WHAT'S THE PROBLEM?

A.) intel countersu CJ Protracted courtroom battle. Result uncertain

Stalling or even slowing Intel started shipping in early 199a. which has been shooting out And it has been the mainstay of new chip families faster and Digital's profitable AlphaServer

faster - by means of a potenline of enterprise servers for the tially time-consuming, costly past few years But the chip has always been and highly technical courtroom debate could work to Digital's priced far above Intel's comadvantage. And if successful. modity prices in the mass Digital could wan billions of dolvolume PC market, and that lars. "We don't mind competing is partly why the Alpha has with anyone's technology but our own." Digital CEQ Robert

failed to draw much interest from the software and application development com-Ultimately, though, Digital's One result: Alpha gamered less than 0.1% of the estimated \$16.a billion in overall microprocessor revenue last year, according to Semico. Digital has tried for several

The simple problem is that they have failed to establish a years to boost sales by trying to value proposition that will make interest other chip vendors, inusers want to buy the chip." cluding Intel, Texas Instruments. Inc. and Motorola. Inc. to license its technology. And for the past year or so. Digital has tried to boost popularity of the chip by offering increasingly werful Alpha servers capable of running Windows NT D

Citrix/Microsoft deal puts WinFrame on fast track Companies can look

to multiuser Win NT

By Stewart Deck

TWO MONTHS AGO, Citrix Systems. Inc. was under a dark cloud

Microsoft Corp. had an-nounced it was developing software to compete with Citrix's WinFrame multiuser system software, shareholders had filed lawsuits against the company for mismanagement and misrepresentation, and Citrix stock had fallen from \$40 in mid-lanuary to just over \$12 in mid-March.

Now that cloud has lifted

After 12 weeks of ner tions, Microsoft dropped its development plans and signed a \$75 million licensing and development deal with Citrix.

Under the pact, WinFrame will be folded into Windows NT 4.0 and 5.0 to allow multiple users to access copies of applications running on Windows NT Server

"This deal truly sets the stag for multiuser Windows NT which is what large organizations have been waiting for," said Gree Blatnik, an analyst at Zona Research. Inc., a consultancy in Redwood City, Calif. The deal helps Microsoft set a

standard way to deliver Windows applications to thin cli-



sts, network computers and Windows terminals, "which should open the floodgates for

many thin-client companies as well as for [network] PC vendors," Blatnik said.

Citra's stock rose more than

"If you don't get the foundation right, there's no bone of building something that can deploy

little to do with technology or In-

tel's alleged stealing of it, ob-

servers contend

Gwennao said.

these applications," - Edward Jacobucci. Citrix Systems

12% last week to \$14 7/8 an of right, there's no hope of build-Wednesday Citrix Chairman Edward lacobucci said Microsoft saw a

tough engineering task ahead of it and felt market pressure to of next year. []

They had the Inetwork comuter) folks coming at them om one direction and they've got their Windows franchise to support while customers want fixed-function devices for rapid deployment. We were sitting there with a field-tested an swer," lacobucci said.

Microsoft finally acknowl edged the expertise of Fort Lan derdale, Fla-based Citrix. "Of course Microsoft can develop anything they want to . but this isn't really an issue of how many people you can throw at the problem," Iacobucci said. "If you don't get the founds

ing something that can deploy these kinds of applications Iacobucci said the Citrix will likely triple its workforce, from 180 to more than 500 by the end

Sun and SAS Institute. Related? We might as well be. For the 7th year in a row, Sun is the open systems platform of choice for SAS* software users. Together, we deliver proven applications and the most current and innovative technology this side of anywhere. A combo that results in real business solutions, like the SAS Scalable Performance Data Server". It allows customers to take full advantage of scalable SMP architecture in their data warehouse, and it's only available on Sun. SAS Institute and Sun also jointly staff Customer Technology Centers to give SAS software the full potential of Sun" systems. So you have the ultimate products and solutions for your diverse business environment. Which is, after all, what this alliance is all about. To find out more, contact us at www.sun.com/sepcw or www.sas.com/ THE NETWORK IS THE COMPUTER"

All the right moves By now everyone knows how the IBM RS/6000 beat the Russian.

But did you know that when Bill Gates heard that Lou Geratner was about to make all this marketing has. he got janious and offered to play Garry Kasperov him--40

tels, the match had to be postponed berse Gates' castles are still under construction Not to be outdone, Larry Ellison immediately called a press conference to challenge Kasparov.

Of course, Ellison had to retract the challenge the next day, after a horrified Ray Lane reminded Larry that he was no Chess Ora-

And it wasn't long before Scott McNonly got in on the act. The Sun chieftain as-

ed a team of top java programmers, but the group declared victory before the contest actually started and then left to create a start-up.

I also discovered that Deep Blue wasn't the first computer to take on Kesparov. Initially, IBM sent an S/390 mainframe into the frey. But unfortunately, it was disqualified when the first game dragged on for gr days. Seems the mainframe's style of pity was to think all night and update its position every morning.

IBM then went too far in the opposite direction, sending in a ThinkPad against Kasparov. The laptop played the Russian to a standoff for about two hours until its battery died.

Another amazing fact I uncovered takes us back to early 1996, when Microsoft sent a Windows NT box up inst Kasparov in a secret match. My spies tell me the NT machine started off brilliantly but couldn't scale past the 12th move

And I haven't been able to neil down this one, but I hear this wasn't the first time Kasparov had lost to a computer, either. Rumor has it that a VAX stunned Kosparov three years ago. But the marketing people at Dig-Ital decided to keep the news to themselves.

Mal Weinberg

that the American figure level a mechatisman programming supramage Melline. He also an contenting systemal fact a virtual mechanic fact littles in to this, billier—it can also be reminded in relative solution to the content of the content of the content of the production of the content o



.

Leave the manager-hashing to Dilbert, reader advises

was amazed at the soaphot your speak to their upers and are inca newspaper provided for potenpuble of looking at a project from tially disgruntled employees ("Dear ex-boss," CW.

April tal No doubt some of the cases are justified, but it's plain to anyone who's had to nage a diverse IS staff that a sign nificant part of the ranting and raving

wouldn't stand up to Such articles can be useful only if they are balanced by views from bosses who've had to fire IS professionals who talk tech

Unix-to-MT migration pain

Server. Client PC functionality and

four days of downtime, inis great! cluding a reload of NT, the apolication and database. The higher-priced RS/6000 would have been easier to troubleshoot.

diagnose and fix, with downtime of not more than a day. The moral of the story: Consider hardware reliability very seriously as port of the decision to move from Unix to NT. Matt Conmou Amherst, N.H.

a business perspective. Please be assured that dolts exist in cubicleland as well as in

Leave the ma ager-bashing to Dilbert (which we can laugh at beright place for it). Until then, looking forward to the se

read your article "Cashing in on SAP skills isn't so easy" KW.

I am in the middle of reorgani

ing an SAP-written program that

prints purchase orders. The sub

routine I have under the micro-

comment. And oh yes, in German.

his ain't fun.

but the money

scope is 738 lines

of poorly written

code whose doc-

umentation con-

the name of the subcoutine as a

sists of repeati

March sol and found it amusing

quel: "Dear ex-employee (you're fired)." M.G.

IS evolect m

oped for the Internet. guage at all but a protocol for exe-cuting programs that return valid Hypertext Transport Protocol inworth the daily frustrations

sation over the World Wide Web. Perl was invented to do re-port processing before the Web existed, and it simply happens to be a real good fit with most CGI appli-Brian Fuelkierd .

nents from its reade Letters shouldn't exceed 200 words and should be ed-dressed to Maryfran Johnson ecutive Editor, Computer-orld, PO Box 9171, 500 Old Connecticut Path, Framin lass. 01701. Fat numb (08) 875-8931; internet an address and phone no for verification.

Cash rewards of SAP are

Your recent article glosses over the rehability issues associated with moving applications to low-cost Intel boxes ("Forced march." CW. March 241 Last fall. I ported an RS/Good Informix PowerBuilder-based application to Windows NT and Microsoft SQL

orformance mere nearly identical. But a flaky SCSI adapter masquerading as a hard-drive failure resulted in

There are no semantic clues to data and subroutine names unless you understand German. The program is written in ABAP, a nonlanguage with an inruction set that varies according to whether you are coding a screen interface or processing "with or

without" a logical database. As long as SAP sells R/3, I don't see

the demand for people with a high pain threshold fading. This min't fun, but, oh, the money is great! And in the evening. I can fire up my home machine and program in C for fun.

lim Muri nes, Ohio

Speaking of languages. CGI protocol isn't one

n your article, "Beyond HTML," in the Premier 100 special publication ICW, Feb. 241, a large tech nical error is made. You state that Perl and Common Gateway Interface (CGI) are languages devel-This is not true. CGI is not a lan-

> Cary, N.C. beexelvi@mindspring.com

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Expanding 'shrinkwrap licenses' unfair to users ... Ralph Nader and Todd Paglia

he last time you bought software you "agreed" to a license arrangement that you probably didn't even notice. Software packages have a plastic coating of shrinkwrap, and according to vendors, purchasers are bound to the license upon cracking that

coating -- thus the moniker "shrinkwrap license."

The shrinkwase license lies in wait until the information product malfunctions, when the software company will claim that pursuant to this seldom seen and le-understood document, you have forfeited most, if not all, of your rights to recover for damages. This is a great advantage for the information industry.

There's one hitch. The shrunkwrap license isn't universally enforceable. Few courts have even considered its legality. and with mixed results. Most consumer advocates and many professors view shrinkwrap licenses with disdain: The terms aren't available for review until after the purchase, and the dictated terms

Now comes the National Conference of Commissioners on Uniform State Laws and its draft law known as Article aB of - to use these questionable licenses to disthe Uniform Commercial Code. This law

are a few permissible terms:

#For software sold over the Internet, spanies can escape liability for infect-

ng a purchaser's computer with a virus by simply providing a warning in the lise that no virus checking has been se. And you can't read the license to nd this out until after you purchase the

All liability for defective products, including expensive technical support calls, damage to The draft law lets soft-

hardware and lost data, can be limited to replacement of the purchase price. Purchasware companies avoid ers are required to accept all

companies get all the benefits.

ware companies will be able to se lect the state in which small businesses will be required to pursue legal action for damages caused by defective software. clicking an "I Agree" icon for that term during installation, even if it's an unreaable provision. This takes advantage of the fact that after the transaction is thought to be complete, the "I Agree" icon will be clicked repeatedly to finish

Article all also fundamentally alters consumer/seller transactions — what was a sale is now a license arrangement ware buyers would fall outside the coverage of federal and state const tection laws that focus on sales of tan gible goods. In addition, Article 2B will disturb the careful balance achieved un-

Article all poses a serious threat in all of these areas because it will be offered as leaislation in every state. Broad adoption is predicted.

Article a8 isn't a bul oposal. It unfairly favors sellers over buyers, and it is a mechanism for software compunies to escape responsibility for mis-deeds and carelessness.

staff attorney at the Washington-based Consumer Project on Technology, founded

tate terms that are extremely unfair. Here ... but new software law wouldn't hurt IS Mark Nebergall

responsibility for misdeeds

proposes to broadly validate shrinkwrap

licenses. Article aB replaces shrinkwrap with another post-sale formality. Well af-

ter you have made a purchasing decision

paid your money and gone home or to

the office, an "I Agree" icon appears on

your screen during installation. By click-

ing on "I Agree" you supposedly "as-

Article 2B allows software com

and carelessness.

or the past four years, a committee appointed by the American Law Institute and the National Conference of Commissioners on Uniform

State Laws has been drafting a set of state contract laws designed to clarify and make uniform the law related to software licensing.

Contrary to rhetoric in the press that it will take away users' rights, the proposed set of laws, called Article aB of the Uniform Commercial Code, will have fittle npact on large corporate software users. The rhetoric is inaccurate and con-

fuses the difference between what a software company is obligated to do when unproperly performing software causes harm and what it is compelled to do to

ccessfully compete. This rhetoric also is completely irrelerant to corporate IS departments. Except for a limited number of rules grounded in public policy, Article 28 will allow IS ments to continue to contract with are companies for the results they

The committee's philosophy has been to construct a set of basic contract rules and then set out an array of "default rules" that apply when the contract

In other words, this draft unifo asks, if the buyer and seller had thought about this issue, what term would they eve put in the contract? Or what terms sould the law impose if the parties haven't otherwise agreed? The law then would view

the contract as if it contained the term. This ap each closely tracks prerailing practices with other

maker and user have a dispute over a re-und after the windor promised to deliver our modules but could deliver only have. The contract doesn't contain any ms on this issue. Article all might ply a default rule that requires the dor give a full refund conditioned on return of the other modules. This default rule strategy gives the

arties significant flexibility in structurng their deal. Because software is uch a complex product, both the licenser and the licensee need the freedom to use their imaginations to come up with terms that fit the particular needs of a transaction. A set of laws that im-

terms could detive parties of creative ingredi-ents essential to

If the law reflects cor practices. IS departm shouldn't be affecte corporate 1S departments acquiring big ticket software systems? It would mean very little. The contracts used to acquire big-ticket software aren't the so-calle corporations spell out in agonizing detail the rights and obligations of the parties to the contract. They try to cover it all.

Many corporations also often acquire standard shrinkwap license. Article all ther the terms of such agreements of eir enforceability because the aun of the drafters is to reflect commercial prac tice. If the drafters can achieve that go epocate 15 units shouldn't be affected

More work remains to be done on this proposed set of laws. The Software Publishers Association hopes that those charged with the drafting will continue to treat large business users like the adults they are and not impede their abil-ity to conduct commerce on agreed

Nebergall is a vice president and counsel the Softmare Publishers Association. He handles licensing policy issues for the soft



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Wintel has right HDTV idea

DAVID MOSCHELLA

LTHOUGH THE COMPUTER community is often rightly corned shout the estraout nary power of Wintel, there are times when it comes in hands. Whenever the overall interests of the information technology industry are at stake. it is mice to enough with a congle, strong voice. That's what happened

last month at the National Association of Broadcasters convention where Microsoft. Intel and Compan announced an impressive although admittedly last-minute, alterna-

tive to the prevailing high-definition tele-

vision (HDTV) rollout plan. Shrill arguments about HDTV have been an IT industry fixture since the midtoSos, so it isn't surprising that many people have

tuned out. But this long. often frustrating saga is ending. At stake is whether today's PCs will be able to receive digital television signals, and whether tomorrow's HDTVs will be able to easily connect to the Internet and other computer

Underneath mountains of competitive chicanery lies a single technological dispute. The so-called "Grand Alliance" of HDTV designers continues to promote an interlaced scanning transmission mode that is fundamentally incompatib with the progressive scan systems used in computer monitors. The Grand Alliance correctly argues that interlaced scanning is the only way to bring the highest-quality HDTV pictures to the market immediately.

PC industry leaders counter that their ogressive scan approach offers nearly as high image quality and full compatibility with computers. They also predict that progressive scan systems will soon match, and eventually exceed, the quality of the older interlaced approach. Perhaps even more important, within a year or so, new PCs could include digital TV recep-tion capabilities for as little as \$100. Such PCs might outnumber \$2,000-plus HDTV sales by as much as 100 to 1.

PCC STEPS ASIDE

Although the Federal Com sion has historically been the arbiter of HDTV standards, it wisely stepped back in this case. It set a time-table for mandatory digital TV transmission, but largely because of pressure from the computer industry, it has decid-ed that transmission format issues are best left to the market. Consequently, it's now up to the computer industry to persuade the major TV networks to transmit signals that PCs can readily accept. That won't be easy.

Microsoft, Intel and Compaq often come across as arrogant, but their strate gy happens to be correct in this case. Standardizing the progressive scan approach would lead to true PC/TV integration. If the two industries achieve real interoperability, it will be only a matter of time before image resolutions im-

But within the highly politicized realm of HDTV, being technically correct is only half the battle. You must also get the support of content makers, owners and broadcasters. Here, issues of power, selfinterest and trust become paramount. As one who hopes that two years from now we won't have to decide whether to buy an HDTV or a new PC monitor, I hope the PC industry leaders of today hope the PC industry leaders of local help drive the digital TV systems of tomorrow. Go Wintel. D

Moschella is senior vice president of research at Computerworld, Inc. His Internet address is david monthdingth on com-



Briefs United parallel system flies through data

DEEP BLUE Vital stats or Her's 25/600 that defeated Gerry Kaspare

> Metable 6 feet 5 inches

Apr Apr A years Writing

Yorkhorps, N.Y. or of princessors 206

MPP Unix system scales up to 64 chips

By Tim Oscillette

ANYOHE WHO FLIES knows how confusing and stressful it can be to find connecting flights and make it to the gate on time.

Glenn Cohille and his information systems staff at United

With the growth in routes and flights, the aging mainfrance at the \$15 billion airline can no longer handle the yield-management system. The system is responsible for coordinating connections and preparing a proper passenger mix on each plane in the right time frame. The passenger mix includes those making connections and those fly-

ing directly to their destination.
To get a better grasp of the options and business decisions available. United plans to offload this application from the mainframe to an IBM RS/6000 SPa. a massively parallel processing (MPP) Units servercessing (MPP) Units serverS MOTEO

"We need parallel processing to predict plans for people flying from Boston to Chicago while doing the same thing [on different processors] for passenpers flying from Denver to San Francisco," said Colville, a manager of research and development at Unived in Elk Grove, Ill. "With the 5Pa, we can betak up

the proteens:
The SPa is among a breed of
MPP Unix machines that serve
as a heavy-lifting alternative to
mainframes and Unix symmetrical multiprocessing servers for
some applications, such as the
modeline United requires.

Other MPP vendors in this market include Tandern Computer, Inc., NCR Corp. and Pyramid Technology Corp.

Technology Corp.

Analysts said MPP is especially appropriate for targeted applications such as complex modeling.

"The SP isn't a direct replacement of the mainframe, because mainframes for traditional transaction processing operations are still builterproof," said Rich Partridge, an analyst at D. H. Brown and Associates in Port Chester, N.Y. "But the SP is a complement that can grow believe access to the processing operations of the port Chester, N.Y. "But the SP is a complement that can grow believe access the processing of the processing of the second of the processing of the processing of the second of the processing operations operations of the processing operations of the processing operations of

at the kiosk, a Delta spokesper-

the kiosk, a Delta spokesperm said. That makes using the kiosk

That makes using the kiosk more personable than using a telephone or a World Wide Web

While the Dell Dimension is a

new venture for the company, other vendors are betting on revamping their existing lines with Pentium II. Compaq's Pentium II-based

Deskpro 4000 and 6000 lines cost from about \$3,000 to \$5,000. They are loaded with advanced graphics and CD-ROM drives.

In fact, "fully loaded" appears to be the key phrase for most machines. Mountain View, Calif.-bosed Packard Bell NBC, Inc.'s Power-Mate Professional Series, which comes in five configurations and ranges in price from about

\$3,600 to \$4,000, also features 32M to 64M bytes of RAM. All but one of the machines feature a 266-MHz chip. The hard drives range from 3.2G to 4.35G bytes. Cl NP to stip graptics box

Hendrich Parlamed Ca. Institute words assumement the most ability of a dead-precision. If this paper is to implement the Gabbi Units specially systems on the high-word HP Exemples included surveys.

10P is adapting the 10P VI-smiles bladed judic, a tephnical surveys and the collection of the collect

proceeding capubilities, which spend application perfoments and accelerate torment three-dimensional graphcs display. 149 officials said the blooks!

julie is almed at electronic and machinism design automation engineers who work on complete and computaionaries design tester socitions. Petring for Intend. Julia series at Syg., pro... 149 also said it plans to in-

> A XClass HP Emergin haird serves. The two high-and serves one were originally devel

Corp., which HP acquired 1995. HP slow split it is reduced the price of all its theory 5-Class and X-Class serve by one sweeth as 1956. Price on the blade-and servess as the blade-and servess as

> — Yorken Base IDG None Santa

MICROPROCESSORS

Vendors embrace Pentium II, target corporate market

By April Jacobs

VENDORS ARE FLOCRING to support Intel Corp.'s latest chip, the Pentium II, although some organizations might find the offerings a bit pricey for the average end user.

With prices ranging from \$3,000 to \$5,000, the first batch of Pentium II-based machines — PCs, workstations and servers — are being offered by some of the usual PC industry suspects: Houston-based Computer Corp. In Round Rock, Peass; IBM; and Micron Tech-

nology Corp. in Boise, Idaho.
Some of the Pentium II-based systems are being positioned for the corporate market. Those systems are aimed at business and financial applications that need workstation-like horsemower.



such as stock market trading and imaging (CW, May 12). Dell'a new Dimension, for example, will power up an electronic commerce pilot program at Delta Air Lines in Atlanta.

It will let the airline's customers purchase tickets, check frequent flier miles and arrange travel at remote locations. The customer can talk to a Delta representative via real-

United picks parallel system

CONTINUED FROM PAGE 37 certain applications like decision support

that need to process vast amounts of data quickly."

SP2 is a cousin

couldn't provide the power to do all the calculations needed to get the best pas-senger mix during the overnight time frame available, instead the

mainframe does a pared-down set of calculations to

finish in time. But because the analysis isn't as detailed as United officials would like, they are concerned they may be losing money along with the precision in those calcula-

We have to have the calculations ready by 8:30 a.m. for the revenue man agement department" to decide on flight bookings and schedules. Cobolle said. "With the SP2, we will be able to do all

the things we really need to do in the

business-defined time window." And in September, when United's SPa. goes live with between 30 and 64 processors in the box, time won't be the only thing United gains.

The goal of this system is to make money," Colville said. "We will be able to produce \$50 million more in revenue a year with the SP2."

But it doesn't come easy. Much code rewriting is required for processors," Colville said. [3]

the SPa to tackle a whole slew of new calculations. And with no parallel process-ing experience on staff, Colville purchased a programming tool from Torrent Systems, Inc. in Cambridge, Mass., to handle the technical details

'That way we can think about the business issue of applications coding for forecasting issues, and the tool takes care of spreading the code around to different

Hardware sales rise Sales of electronics eq

such as computer chips, will grow nearly 10% this year, according to analysts at Dataquast in San jose, Calif. Worldwide revenue this year old reach \$990 billion, with at one-third coming from dataet will be fueled by an in-

Flat-panel standard

ng a new un

Low-cost Compag

oq Computer Corp. in Ho ton has relessed a new low-cost PC. The Preserio 2120 costs Sogg and tes of memory, a 2G-byte hard to, a 33-6K bit/save, a 53.6K bit/sec, modern and eight-speed CD-ROM drive in a

SATHONE, INC. has announced Data-Xchange Unit, a multidrive exchange unit that allows systems administrators to interchange and access data between any manufacturer's data library and any form of drive.

According to the company in Boulder, Colo., the unit takes data stored on tape, optical or magnetic disk media and

transfers it to where the ad The DXU-3 FlatStor and DXU-9

TowerStor models support three or nine storage devices, respectively. Pricing starts at \$1.335. DeteThink (303) 448-042

nounced a 23G-byte hard disk drive According to the Irvine, Calif., com my, the drive uses a Cay-in, hard disk and supports Windows and Macintosh systems. Transfer rates are as high as 11M bit/sec. It takes both bays of a two-bay DataDock docking station. It costs \$6,250.

(714) 411-6100

LEGACY STORAGE SYSTEMS CORP. has an nced the Vantage CD-SmartServer CD-ROM system with 16-speed drives.

According to the West Newbury, Mass. company, the SCSI system includes seven disk drive devices in a single cabi net. Systems are also available for Ether net LANs and Token Rine networks. Pricing starts at \$2,550.

Legacy Storage Syst (508) 465-1706 warm lesson co

INTERGRAPH COMPUTER SYSTEMS has announced the TD-aas PC, a zss-MHz Pentium II PC for users who need interactive three-dimensional graphics performance.

According to the Huntsville. Ala. company, the PC includes five interface

slots and support for up to 522M bytes of

features Intergraph's Intense ₁D graphics accelerators It costs \$2.08s mergraph Comp

ounced Smartglas. a tisplay network designed to save deskroo pace over conventional monitors.

According to the Acton, Mass., company. Smartcon the ectronics of four display monitore in

to a single hub with a single stan-dard graph-

ics card and a centralized system with reduced power

Pricing starts at \$3,000 (508) 264-9443

> APCOIL IIIC. has announced Fowerlink, an SCSI extender.

According to the Portland, Ore., company, Powerlink extends the SCSI bus to to kilometers while supporting a data rate of 40M byte/sec. It was designed to provide real-time access to remote pe-ripheral devices such as tape arrays, tape raries and CD-ROM jukeboxes. Pricine starts at \$4.000.

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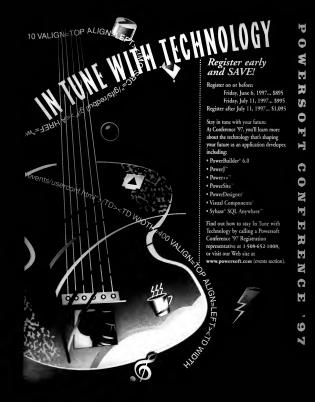
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lations

-Direction -

Turning Is Managers into IS Leader

BY BART BOLTON

COMPUTERWORLD Leadership Series

- not just at the top, but throughout the IS organization. It can only be done if we develop the person, not just the manager.

MORE THAN EVER, IS NEEDS LEADERS

Jim, a middle manager in a reiathrely small IS shop, designed an leternet application that not just boosted his company's revenue, but changed the way his company and his industry works. When the opportunity nted Itself, he stepped ferward and lead a consortium of companies to implement his application, involving billions of dollars of revenue, across the entire ledustry. His self confidence, passion to solve an industry problem and willingness to trust his get brought results. Jim is a

er in an IS department, used to man age a small group of technically-oriented people in a very quiet.

leader!

ning manner. Today, his man ager, the IS executive for the compary, says Eric, a recent leadership program graduate, "... is more at ease in dealing with executive management knows more about bireself; he's more confident." He sees Eric as "... ceaching others and taking more visible leadership, thinking through situadons, not last the next stee." Eric's people look up to bim new and follow him. His style has changed. Eric has

Annema e landari

Leadership should not be the sole province of the CIO in the IS community. IS needs leaders and their skills throughout its organization, be they managers or individual contributors, be they executives or supervisors. Most projects fail because of people issues, not from failure to draw a good PERT chart.

LEADERS, NOW MORE THAN EVER S needs more Jims and Erics, and it needs them more - much more than ever. As one CIO at a midwestern Fortune 200 company told me, "Up to now we've focused on mastering basic skills such as project management and presentation and writing skills. Now, we have to mastet leadership skills such as team building, choosing peo-

Just think about what is impacting IS: The Internet is bringing the IS departments into the revenue stream of their companies, even more than electronic data interchange did 10 years ago. The sales and marketing functions are drawing on this new tecbnology to produce orders. That puts the IS people into the front lines with the customers. Users are no longer just internal, fel-

low employees but real, money-

dependent on the use of the Internet to generate revenue that we've teorganized the whole company behind the IS organization which is now engaged with our prospects and clients via our web site." I heard from an IS

executive of a service company. ■ IS organizations are reinventing themselves. Client/server. object-oriented programming and other technologies have put great strains on IS organizations. Rightsizing, re-engineering and the upheavals in various industries have taken their toll and placed increased demands on IS. Many organizations tried to accommodate these new demands using traditional approaches and structures. They are now realizing that IS itself must change how it does its business and its organizational struc-

ple carefully and developing ture to be successful. IS organizations today are becoming much more process focused in order to be more flexible and adaptive to meet the constantly changing demands of the business. Many have resource pools, sometimes called Centers of Excellence, from which the company can draw highly skilled talent when needed. Others, in order to focus on customets, have established "account managers" to reach put to various parts of the company. Still other IS organizations provide intetpaying customers. nal consultants and experts in "Our company has become so project management and process



engineering to the rest of the NANAGEMENT VS. LEADERSHIP

All these changes require leadership at every level in the IS organization. The core competencies of IS must include not just technical skills but behavioral traits: flexibility. concern for excellence, learning and self-confidence are needed to meet the constant stream of change

CIOs need to do some organizational introspection to determine whether they encourage or reward their IS professionals and managers to exercise leadership. Do the core values of the department-encourage IS people to take risks and know when to lead? Does the IS team distinguish leadership from management

istorically. our organizations have focused on management techniques and skills planning, budgeting, and various administrative

processes to operate their traditional hierarchies and stovepipes. Today, however, these management skills need to be balanced with leadership skills. In practice, that means our profession has to place more emphasis on developing leadership skills than

management skills. That's something that the young, up-and-coming IS managers seem to understand. Said a recent graduate of the Society for Information Management's Regional Learning Forum (RLF), "At my previous company, I was responsible for a 60+ person organization that provided IS/IT support for one of the divisions. Today, I have a group of 15 high-level technical specialists that are focused on distributed computing technologies - research, build prototypes, help IS organizations build architectures and make product decisions. It is a very pavy influencing role for a very large corporation. So leadership skills are key --- it is very much a lead role within the company and [involves] very little of the traditional management (skills)."

Another graduate relates, "I changed from managing a group of application developers to an individual contributor role of researching and recommending various technologies. I now have to depend on leading by influence to get the right technical decisions made as the implementors no longer work directly for me."

Management and leadership are truly quite different. According to John P. Kotter in his book. A Force for Change, management is about planning and budg organizing and staffing, control ling and problem solving. Lead-ership, on the other hand, is concerned with establishing direction and aligning people, as well as motivating and inspiring. He adds a valuable point: Too much management leads to bureaucracy and too much leadership leads to anarchy. What is needed is a blend or balance of the two

The participants of the 1995 SIM Northeast RLF created a list comparing management and leadership during their ninemonth forum. (See chart, "Management and Leadership: A Comparison," page 6.) They concluded, "A manager uses a map to determine the direction

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Batter products, battar praductivity.





Management and Leadership: A Comparison

Leadership Management THINKING PROCESS

Brain (logic) Things Inward focus In the box

DIRECTION SETTING Plan

Bostom line Shott-range view Sees trees

EMPLOYEE RELATIONS

Administers

Uses leverage

Policies and procedures

Control Instructs Directs and coordinates

MOOUS OPERANOL Efficiency (do things right) Asks "how" and "when Copes with complexity Manages change

METHOOS AND TOOLS Mission

Depends on process and system

in which to go and a leader uses a compass." Their reading and discussions not only uncovered dramatic differences between the two but changed their management styles and how they operate in their work environment. As one graduate said, "I am

finding more win-win situations . so many ways to get things done without having to get into face-offs. Even in my security role, I help them find ways to become policy compliant rather than order ir to be so." And another said, "I realize thar you can lead in a visible and vocal manner and that you can also do the same by working quietly behind the scenes."

One example in the IS world of the contrast between leadership and management is in project management. One leads the project team by empowering the people as opposed to control them and exercising project administration. Coaching and mentoring the team and encouraging them to take responsibility is more effective than older management styles especially with cross-functional teams

IS people develop their lead-ership skills by constantly striving for a more holistic view. Developing trust-filled relation-ships with users, actively listening to their real issues, learning when and how to "say no," read ing nontechnical books and business-related articles, developing a network of IS peers outside the company and learning to trust one's intuition more will build self-confidence in an IS person. Then, when the need is appar-ent, the IS professional will lead the solution and not just analyze the problem. Of course, our organizations can't operate in an "either/or" state. These young

men and women know we need visions and plans, creativity and

analysis, logic and intuition. The

Source Participants of the 1995 SSM No. 6 - MAY 19, 1997 - www.compaserworld.com/leadership point is, for now we need to place more emphasis on devel-

ng our leadership skills. ClOs should look at their own leadership style even to the point of having an outsider explore how much leadership vs. control they exercise. A workshop with their direct reports and key staff members to develop the core values and principles of the organization is a good first step. Making significant books available and encouraging and participating in book discussions among the IS organization and/or having Friday afternoon learning forums with outside speakers are practices of some of today's IS leaders.

DEVELOP THE INDIVIDUAL

t has been my experience over the past four years of facilitating the SIM Northeast RLF that leadership begins with individuals knowing who they are, understanding the important influences on their lives and taking responsibility for their own ersonal development. If one doesn't have this basic understanding, the self-confidence won't be there with which to lead.

Pat Wallington, CIO of Xerox, once said, "The only capacities you need to be suc cessful are: Learning to learn and learning to change." That is a basic formula for developing individual leaders.

Organizations should adopt this concept: Develop the indi-vidual, for the individual develops the organization. It is done successfully no other way! Individuals need to understand what is really important to them. What do they really believe in and would never compromise? These are their personal principles or core values. They make de who they are. They're the is of one's ethics and leader-

ship style. Knowing who you are and what you are really good at - even to the point of understanding your lifetime's work and the legacy you want to leave behind - is critical in build-

ing leadership skills. Graduates have told me time and time again that they are now able to work successfully and effectively with executives because their self-confidence has increased. It is because they have worked to maintain a balance among the three priorities of work, family and personal time. This balance maintains a mor holistic view of one's world and allows one to be more adaptable

and effective in all three parts In fact, one recent RLF graduate told me, "While receotly interviewing 40 candidates for several openings, I felt far more cognizant of the balance in people. Given the choice between a 16-hour a day PERL/Java programmer and ao eight-hour a day programmer who is also an splished cellist, I picked the cellist!" The RLF graduates

understand the personal princi-ple of "lifetime learning." They arn from all sources available to them - from a wide variety of books to an ever-expanding personal network. They under-

stand that personal growth ensures their effectiveness.

One graduate, who is now the sident of a consulting firm, says that they "are rewriting every employee policy to allow the indi-vidual staff members to grow in

their leadership skills." He believes they will then be more effective as consultants with their clients. A strong sense of self is needed for the so-called "soft" inter-

onal skills that are required for leadership and creative decision-making: effective commu nications, deep listening, facilitating, negotiating, working with conflict, relationship building, understanding how to work effectively in teams and know ing when to say "oo," Each of these skills is a must for answering the demands of today's IS organization: managing complex ojects, negotiating with users endors, and other parties, work ing with outsourcers, and estab

lishing alliances and parenerships.

And because leaders are unique, growing individuals, individual leadership styles are different. These facts belie the myths that oearly all leaders are charismatic, bigger than life figures who are mysteriously born with these qualities. The vast majority of leaders are developed









Everyone is out there hawking the platform they have. Is there anyone who has both? Step into our tent. HP Domain Internet Servers are the most scalable, manageable and secure solutions for both UNIX* and Windows* NT. Regardless of your cavironment, we can help your company thrive on the net with HP consulting, education and support. Talk to us. Our marketplace is at www.hp.com/go/domain Capitalize on chaos.



not born; they are products of their roots, their personal development and the environment in which they learn and grow. Nor are leaders "bigger than life"not everyone is a John F Kennedy or a Martin Luther King, Most leaders live quite normal lives out of the limelight and lead as the occasion demands it from them. And while it might be helpful to be charismatic, it is not essential. One does not have to be charming from the podium to operate as a leader.

consultants, systems developers or technical architects. A gap What one does have to do. analysis between "what should however, is to focus on both be" and "what is" in these indiintrapersonal and interpersonal vidual competencies will make skills. If you don't understand

yourself and know what you are the individual

good at and what is importa

to you, you will have a very dif-

ficult time leading others when

you need to do so. Developing

time of continuous learning.

ASSESSING YOUR LEADERSHIP have three suggestions for readers who wish to grow as leaders

one's leadership skills is not a onetime process but one of a life-One of the best tests I've heard comes from Bill Glavin, president of CIOs should determine and Babson College in Wellesley, understand the critical competencies or behavioral traits of Mass. He says, "Once a month, successful IS professionals, be stop and watch yourself go by!" they project managers, internal How are you doing with your core values including your life's halance?

How well are your leadership skills developed? You might try taking the Personal Leadership Questionnaire (below). It's based the case for the development of

Personal Leadership Ouestionnaire

The higher the percentage of "yes" answers, the more effective your leadership skills probably are.

- 1. Do you have a vision of where you will be in the future and have you shared it with
- anyone else? 2. Have you documented your personal set of principles and core values by which you run
- your life? Do you accept and adapt to change easily? 4. Are you someone who wants to make a dif-
- ference and not just accept the status quo? 5. Do you accept total responsibility for your own personal growth and development?
- 6. Do you study successful people to apply their principles and lessons learned to your own experience? 7. Have you read several books in the last year
- for the purpose of learning and self-improvement besides technical manuals and journals? 8. Do you consider yourself very accomplished in interpersonal skills such as communica-
- tion, facilitation, negotiation, presentation, feedback and listening? 9. Do you trust your intuition and draw on
- your creativity when making decisions? 10. Do you develop and maintain effective relationships with others?

IS Organization Questionnaire The more "yes" answers, the more likely it is that your IS

Leadership

- organization develops or encourages effective leadership.
- 1. Is there a documented vision of the organization in the future, and has it been
- internalized by the employees, the users and other key partners? Is there a set of core values or principles
- by which all levels of the organization . operate?
 3. Does the organization focus on the
- development and growth of the individual as a primary key to success?
- Is there a learning environment or context in which people can grow and advance? Are the members of the organization encouraged to take significant risk and to use creativity in decision-making?
- Is there effective teamwork in evidence? Does the organization focus on revenue more than expense?
- Do users and partners view the organiza-tion as very effective in project management, consulting and customer services 9. Are effective interpersonal skills highly valued?
- 10. Is this organization the source of leaders for other organizations?



on my personal observations and understanding of leadership over the past four years in the leadership forum. Be honest with yourself as you answer the questions. The higher the percentage of "yes" answers, the more effective your leadership skills probably are.

Some IS organizations are more effective in developing leaders than others. To evaluate yours, try the IS Organization Leadership Questionnaire, in the accompanying chart. It is very similar ers. Are they leaders?

to the personal leadership test and has the same set of origins. Again, the more "yes" answers; the more likely it is that your IS organization develops or encourages effective leadership. If there are not very many "yes" answers, it is time for a leadership development stratory and program.

Some other suggestions to Step back and think about the real skills of your high perform-

 Take time to study effective leaders. Learn from a variety of books

and encourage the others in your organization to do the same. It is oot easy to change our organizations but it is worth doing. As one of the RLF graduates told me. "The RLF taught me that culture changes slowly, but that people come around when you develop and share a vision with them and when you model the behaviors that you desire from them. I've made a difference here at [our organization] by slowly turning this ship round, one employee at a time. I've tried to improve communi-cations throughout the organization and to make myself as accessible as I can be." That is the kind of leader our IS oreanizations need. Fortunately, it is the kind of leader our IS orga-

nizations can develop only if they strive to.

FURTHER READING ON LEADERSHIP

Books: Warren Bennis, On Becen Leader, Addison-Wesley, Reading. Mass., 1989. William C. Byham, Zepp! The

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Briefs NT courts the parallel world

But users want to see

products mature By Crain Stedman

WINDOWS NT databases are entering the parallel universe, a step that should help make the Microsoft Corp. operating system more appealing for corpo-

Oracle Corp. and Tandem Computers, Inc. last week announced Windows NT versions of their parallel databases, and Informix Software, Inc. and IBM promise to ante up in the second half of the year. That will give NT servers parallel processinc canobidines that now are down NT on an equal enterprise control of the processing control of the processing of the proces

ailable only on higher-priced footing with Unix, users and an NT'a performance and reliabil-nix systems and mainframes. Windows IT, sage 44

TOOLS FOR WINDOWS NT CLUSTERING Switches processing to backs servers when systems crash Parallel databases Gives multiple server nodes access to a single database his quarter

IBM middleware befriends CORBA

► Allows simpler access to mainframe apps

By Sharon Goudin Sr. Louis

CORRA. a technology that has gained acceptance among users in the past few months, got an other shot in the arm last week.

IBM unveiled its new middle-ware technology, Component Broker Connector, and a companion Toolkit, which depends heavily on the industry-standard Common Object Request Broker Architecture (CORBA).

DOLING ALLIANCE IBM is part of an alliance with Sun Microsystems, Inc., Netscape Communications Corp. and Oracle Corp. that was formed about a month ago to support CORBA in its industry battle with Microsoft Corp.'s ri-

val Distributed Component Ob-iect Model (DCOM) architec-CORBA is a platform-independent architecture that serves as plumbing to connect clients and servers, letting systems and applications communicate easily. DCOM is the

network-enabled offshoot of Microsoft'a desktop architecture, Users said the characteristics of CORBA mean they aren't tied to one vendor's hardware or software when developing important applications that must

cently, there was little market momentum behind the technol-ogy and few major adopters. IBM's Component Broker Connector was designed to manage transactions and appli-cations, regardless of the kind of

tion sits in a distributed system. That means a mainframe appli cation could be acce through an Internet browser out changing the applica tion's code.

CORBA, page 44

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Windows NT courts the parallel universe

ty shortcomings by letting multiple machines gang up on workloads and back up one another if systems go down. But some bigh-end users said they still want to see Windows NT age a couple years be-

fore betting their businesses on it. The ability to run buy databases on NT servers that are less expensive and easier

to deploy than Unix boxes said Daniel Jaye, chief technology officer at Engage Technologies, Inc. in Andover, Mass. Engage is using Informix's OnLine XPS parallel database on Unix to build a repository of internet usage data for analysis by internal and ex-

ternal clients. "The question isn't if, but when" Windows NT becomes an attractive platform for such databases, Jaye said. "But I don't see compelling reasons

for us to change our direction for at least the next couple of years. (NT clustering) sing to need time to m Thus far, Windows NT chastering soft ware has forward on automatic fail-over

and other high-availability features, Jaye Breaking up processing workloads and moving huge chunks of data from server

to server is much more complex, Jaye Csena Dental, an Oracle shop in Plantation. Fla., also expects to stick with

Unix for a proposed move pext year of its dental insurance billing and claims processing applications to parallel servers Parallel technology's big

appeal "is better reliability, so you want to make sure the system you go to is reliable enough. And what I've heard so far is that NT is not there yet," said Juan Sernandez director of in-

formation systems at the Cigna Corp. Oracle officials said Oracle Parallel

Server will ship for Windows NT by the middle of next month with support for four-server clusters. Tandem, as part of a wider NT clustering announcement, is making its NonStop SQL database avail

in the third quarter. Parallel databases and other clustering tools should make Windows NT mo feasible as a business server, said Michael Criner manager of network archi-

tecture at PacifiCare Health Systems. Inc., a health maintenance organization in Cypress, Calif. ness folks when they have VAX or Union

'NT is a tough sell to some of my busiclusters that never go down," Criner said. No server is very good if it's down, no matter what it costs."

CORBA wins middleware support

able across up to 16 systems at a tim

Informsx officials said OnLine XPS

will get Windows NT support as

hardware vendors certify high-speed in-

terconnect software for use on their sys-

tems. IBM plans to add parallel NT capa-

bilities when its upcoming D82

Universal Database software is released

Users at IBM's Technical Interchange greeted the announcement with praise. "CORBA does the best job for us. It's oing to be important for us," said James Chong, vice president of architecture and planning at San Francisco-based Charles Schwah & Co.

Chong said Charles Schwab does use Microsoft's DCOM but is more focused on CORBA because it is cross-platfi and doeso't depend on one company. The estment company will use both CORBA and IBM's Component Broker

The surge in interest in CORBA is directly related to the even larger wave of interest in Java, said Leif Thordenberg, project manager of the information technology division at Volvo Corp. in Gothenberg. Sweden. "We have been discussing CORBA for many years," said Thorden been, who will beta-test IBM's new middieware. "Java is making CORBA reborn. Component Broker Connector, which

It's all about being object-oriented. It's about running on all different platforms and connecting with all your customers is slated to ship in September, is just the latest push behind CORBA. Chevron Corp. recently announced what was the arrest CORBA conversion to date, and companies such as Oracle and Sun Microsystems are embedding CORBA in many of their products [CW, April a8]. (1



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CLIENT/SERVER MAIL

spark more

Upgrades

upgrades

By Barb Cole-Gomolski

Negotiating service levels in

advance may reduce complaints

from users. The parties involved

onsultancy in Newton. Mass.

Briefs Service pacts spur



What piece of advice uld you give Eric hmidt to get Novell

fear and relief ► IS managers see benefits in defining obligations

By Patrick Dryden expectations until they complain," Welf said.

THE BOTTOM-LINE IMPACT OF information technology is growing in many corporations, forcing information systems managers to define how the technology should perform to support the business electronically. Some face that chore with dread, but also with a sense of

"Service-level agreements should make life better, because they set expectations," said Ron Welf, senior technical lead in the network performance and capacity planning group at Charles Schwab & Co. in San

Service levels typically are implied, not stated explicitly. "You don't know you've violated user

Talking to users actually saved money for Blue Cross and Blue Shield of Arraona Some user groups hinted at

the company's need for a back up system when a superserver failed recently, said Gerry Farmer, a systems architecture administrator at the insurer in SAVE YOUR MONEY

"We explained the options and

our performance record, and they decided one day's outsee in three years wasn't worth the cost of redundant systems," Farmer

pretty savvy about technology. but IS managers there are still ne to formalize unwritte Service agreements, page 49

of announcements makes me

ers and remote users, because it

LAN access over copper phone

lines that far outstrips Integrat-

ed Services Digital Network's

(ISDN) 128K bit/sec. speed.

Vorkers say they can access the

rate LAN much faster with

ides Internet and remot

QUICKER CONNECTIONS
DSL is valuable to telecom

can state their expectations about what is feasible and negotiate what they need to meet Users at PageNet, Inc. are business requirements, said Kathrin Winkler, a senior consultant at The Registry, Inc., a

SHIVER LINING

2 Justily budget people for more staff and more

CLIERT/STRVER mail hilled as less expensive to operate than the file sharing software it usually replaces, appears to have its own financial petfalls.

Client/server versions of Lotus Development Corp. Domino, Microsoft Corp. Exchange and Novell Inc. GrounWise have been available for more

than a year Those offerines have let sites support more users per server than was possible in the file sharing world, thereby shrinking administrative costs

But several users said they have seen those savines disappear because they had to boost network bandwidth and up grade hardware to support the client/server systems

Speedy 'net lines roll out slowly third quarter last year. Their lack

Carriers creep up on Digital Subscriber Line

By Kim Girard

DESPITE THE DEMAND FOR quick Internet access, Digital Subscriber Line (DSL) service is reaching users at a cautious

Most local carriers are testing the technology, which can provide megabit speeds over regular copper telephone lines. But to users' chagrin, rollout has been limited to small pockets armes the nation.

quest, a San Jose, Calif.-based consultancy, said DSL services will take twice as long as expected to take off because of clash ing standards, line problems and uncertainty over how to

price and market the technology. Dataquest has backed off its prediction that several million DSL lines will be installed by 000; it now predicts a mill lines at best will be installed by

hype than reality in the DSL marketplace," said Brett Azu-ma, a director and principal analyst at Dataquest. "The [carriers) were all bot to trot in the

DSL, which makes them more productive and less frustrated by But some analysts compared

DSL deployment to that of ISDN, which is expected to finally reach 1 million installed lines this year - a decade after was first rolled out. ISDN otion suffered from install tion problems, wild pricing difrentiation by region and un-

"DSL has value and a market, but unless (carriers) do a better job deploying it than they have \$31. deployment, page 48 EXPENSIVE SWITCH? Cost shifting takes place during

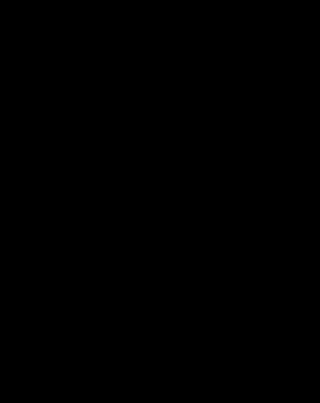
mail to client/server, said long than Lewis, a computer special-ist at the U.S. National Park Service in Ventura, Calif. The service plans to move 15,000 Lotus CC:Mail users to Domino

or Exchange. port fewer users per server than client/server systems, so they require many more servers more hands-on maintenance and a larger support staff, Lewis

Client/server systems, which were designed for large net-works rather than the LAN. Cloot/server mail, page 48

itial users don't have access b

Pricing schemes are still in fimbo



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Question of the week:



What piece of advice would you give Eric Schmidt to get Novell back on track?

'97 answered that question.

Portable sniffer

ork General Corp. recent ed the Fast Ethernet ok Sniffer Analyzer, a de system that lets users et 100M bit/sec. t Ethernet networks.

Network General, in Menlo Park, Calif., will ship the system next month. It will cost

CC:Mail upgrades

ia Development Corp. is ping CC:Mall Release 8, an rade of its electronic mail ral internet standards, inding Pest Office Protocol et Message Access Prool and Lightweight Direc-y Access Protocol.

lease 8 also has a Win--based administration d that was previously availe only for DOS and now the technology, which can provide megabit speeds over regular copper telephone lines. But to users' chagrin, rollout hasvell Directory Services. been limited to small pockets

Exchanging faxes

ge Communication, Inc. nt month will ship FaxWorks vay for Microsoft Corp. change, a network fax server that lets users send and receive faxes directly from their

The software costs Soo and requires the company's FaxWorks Server for Windows

Briefs Service pacts spur fear and relief

▶ 15 managers see benefits in defining obligations Ry Patry 1 Drydge expectations until they com-

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"There is right now mor hype than reality in the DSL marketplace," said Brett Azuma, a director and principal analyst at Dataquest. "The Icaeriers] were all hot to trot in the

DSL DILEMMA

What will delay deployment of the service?

Potential users don't have access because they're located more than 18,000 feet from the carrier's central office or have telephone line problems

2 Pricing schemes are still in limbo

Too many competing DSL varieties

Talking to users actually saved money for Blue Cross and Blue Shield of Argona. Some user groups hanted at the commany's need for a back

un system when a superserver failed recently, said Gerry Farmer, a systems architecture administrator at the insurer in Phoenix.

SAVE YOUR MONEY We explained the notions and

our performance record, and they decided one day's outage in three years wasn't worth the cost of redundant systems," Farmer sand.

Users at PageNet. Inc. are pretty saver about technology but 15 managers there are still trying to formalize unwritten Service agreements, page 45

SILVER LINING How to maintain service-level agreements with users

Stop throwing bandwidth at performance problems

Set realistic response-time expectations for users

Justify budget needs for more staff and upgrades

Speedy 'net lines roll out slowly

third quarter last year. Their lack of announcements makes me QUICKER CONNECTIONS

DSL is valuable to telecommut ers and remote users, because it provides Internet and remote LAN access over copper phone lines that far outstrips Integraled Services Digital Network's (ISDN) 128K bit/sec. speed. Workers say they can access the

porate LAN much faster with DSL which makes them more productive and less frustrated by slow connections But some analysis compared DSL deployment to that of

ISDN, which is expected to finally reach 1 million installed lines this year - a decade after it was first miled out. ISDN adoption suffered from installa tion problems, wild pricing differentiation by region and un availability in some areas. "DSL has value and a market.

but unless (carriers) do a better lob deploying it than they have DSL deployment, page 45

CLIENT/SERVER MAIL

Upgrades spark more upgrades

By Bark Cole-Gomoldi

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or Exchange File sharing systems(tan support fewer users per server than client/server systems, so they require many more servers. and a larger support staff, Lewis

Client/server systems, which were designed for large net works rather than the LAN. Client/server mail, page 49



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Has It Changed Your Life Yet?

Client/server mail systems reveal costs

astically reduce the number of servers that must be maintained. But groupware oriented applications such as Notes and Exchange also replicate messages and rectory information across the network

and let users connect to multiple mail servers - activities that require vastly more power and bandwidth than file Lewis said he expects administrative costs to fall when the Park Service mi-

grates to client/server mail. But the agency will have to upgrade its server hardware and possibly its network to support

LOWER COST ON ONE END. BUT ... A study published in March by Palo Alio, Calif-based Creative Networks, Inc. showed that annual administrative costs for Microsoft Exchange and Lotus Notes were \$83.19 and \$61.35 per user, respectively. Those figures make client/server mail attractive compared with file sharing systems, which cost about \$500 an-

nually per user to administer, according to Creative Networks But those lower administrative costs don't always translate to lower overall

costs, users said.

There's no way you save money by going to Iclient/server mail!" said Mike Long, operations manager at USA Today in Atlanta, which is looking to move about 1,000 users off Microsoft Mail to a client/server system. "What would save a bundle is if we replaced our proprietary mail with Internet mail, but then we'd lose capabilities and security."

"What would save a bundle is if we replaced our proprietary mail with Internet mail, but then we'd lose capabilities and security."

- Mike Long. **USA Today**

Right now, we're still recycling old 286s, but once we go to client/server, we're looking at high-end [Windows] NT boxes," Lewis said. And the client/server mail system will support groupware applications, so the agency expects to see a rise in application development costs. "As sites have begun to deploy client/

server mail, they've seen that they can't cut their (overall) costs by the levels that they expected," said Mark Levitt, a research manager at International Data Corp. in Framingham, Mass.

Users are looking for ways to lower client/server mail costs by deploying World Wide Web browsers instead of full-blown mad clients to some users in the organization, Levitt said. A manager at a large insurance com-

pany in New York that is moving from everal mail systems to Exchange said the insurer is spending more money to upgrade its wide-area network than it is to license the messaging software for 10.000 UMES "We're spending \$600,000 on Ex-

change, but that pales in comparison to what we're spending on our WAN," said the company's messaging manager.

Managers see benefits in service agreements

service outdelines for a vital wide-area network that handles sales, support and

billing for a messaging service with 9 million subscribers. "Our users understand technology, so they don't expect response to be the same across a WAN as it is locally," said Ken Owsley, a network design analyst

at PageNet in Plano, Texas Putting formal guidelines in place will help us all budget," he said, because "we can project where we will need to spend to maintain expected performance levels."

IS managers have to be consistent and accurate in documenting performance if they are to benefit themselves and end users. Welf said. But the high cost of tools that can track response times across a network, and the

technical difficulty of using those tools.

puts off many. New tools require support

for yet another database, expertise in the fine art of instrumentation and compre

bension of networks, systems and appli-

shifting their focus from problem eaction to problem-detection

"When your network is conowing and changing, it's hard to estab-

lish a baseline for normal performance said Joe Tabaco, a systems analyst at the National Weather Service in Silver

Springs, Md. "You can't step back to ana-

lyze it, because you must keep it running

the technical and business requirements

some IS managers foresee an opportuni-

up, but service-level agreements can be

good for showing the need for more staff

and upgrades to our delivery infrastructure," said Bob Napier, a network eng

neer at Lockheed Martin Corp. in Bethesda, Md. D

But instead of feeling threatened by

Also, many IS groups have treuble

OFF-PUTTING

cations.

24 hours a day."

ty to justify themselves. "You feel like you're setting yourself

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VOICE TECHNOLOGIES GROUP, INC., has announced ProAssist 3.0, a clienty

service application According to the Buffalo, N.Y. users to digitally integrate with major private branch exchange (PBX) systerns and provide third-party call con-

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DIGITAL LINK CORP. has announced the DLyroo Multiservice ATM Concentra tor for multiplexing and switchi

voice, data, video, low-speed cell and frame relay for Asynchronous Trans fer Mode (ATM) tras According to the Sunnyvale, Calif., firm, the DL7100 includes traffic management capability for shaping.

DSL deployment CONTINUED FROM PAGE 45

with ISDN, it will be pre-emoted by cable if cable companies get their act together," said loel Maloff, president of The Maloff Co., a research firm in Deuter, Mich. But Bob Fean, a research director at

Gartner Group, Inc. in Stamford, Coun., said he doubts DSL availability will drag as slowly as ISDN. That's because DSL lets carriers off-load data traffic from switches that are overloaded by users who are dialing in to access the Internet, he said. But don't expect mass deploy ment of DSL soon. Egan said

"I think the [regional Bell operating companies] are humbering giants. Until we see increased competitie on from wire less and cable on the local loop, they'll inue to be lumbering giants," Egan

nake sense of the DSL alphabet soun Mark Granzow, vice president of telecommunications at NationsBanc-CRT, a Chicago-based subsidiary of Nation Bank Corp., said he is interested in DSI. technologies, but he hasn't been sold on remote access technologies. For instance, he said, the company had trouble installing IS DN at 12 sites.

Maybe if it was easy to use, we would have rolled out more of it," he said. Several providers have intro IDSL a hybrid of ISDN and DSL that romises speeds up to 768K bit/sec.
They include UUnet Technologies Inc. and US West Communications, Inc.

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trol functions without PBX software It costs less than \$30,000. Voice Technologies Group

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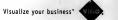
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NETWORLD/INTEROP

Users to Schmidt: It's the marketing, stupid

ATTENDESS AT Networld/Interop 's

held earlier this month in Las Vegas, had the following advice for and observations about Novell, Inc.'s new CEO, Eric B.

Ray Creman, director of marketing at Advanced Computer Services, Inc. in

"Schmidt has jump-started Novell just by joining the company. The biggest issue Nowell has is not the viability of the products, but rather the viability of the company from a marketing and perception standpoint. Schmidt should raise Novell's visibility in

Trucy Campbell, a project manager at Advanced Computer Services. Inc. in

"Historically, Novell has had a huge mar-keting problem. The No. 1 issue Novell has to address is the marketing. Microsoft is eating them alive on marketing. Novell hazvit got-ten on the bandwaren."

Carl Looney, director of operations at Advanced Computer Services, Inc. in

"For my money, Net Ware is superior to Windows NT. Schmidt should raise Novel's visibility and also should make himself known to customers. He's got to do more marketing, but he doesn't necessarily need to sete head-on with Microsoft. Novell should stick with what it knows best — operating systems - and add on intranet and

Catsuhiro Okabe, director of sales at Unitrendix Corp. in San Francisco "Microsoft Windows NT's marketing has been so strong that Movell NetWare's credi-bility has suffered. Schmidt has to reverse that trend. He should publicize Infranct-Ware - it's a stronger product offering than

Windows NT is right now."

Paul McCarlin, a systems analyst at the Automation Group of Allen-Bradley Co. in Mayfield Alien-Bradley is a wholly owned subsidiary of Rock-

"He should stay the course with Intranet Ware. I have lots

of confidence in IntranetWere 4.11 and the other Novell products because they give me lots of great business benefits. As long as Novell continues down this path, they should be in great shape. I don't think Novell is losing

nas Schwartz, an MIS manager at DMB&B in Los Angeles

"He should start out by fixing Group Wise 4.1. For the most part, I don't have a probless with Mouell or NetWare, but I have a huge problem with Group-

Wise It's complete. ly unusable and rupts every day. The remote facility is uscless; all our Mac users hang up

the post office every day. So it's busically my Excedrin headache every day of the week."

Paul Morris, a network analyst at Poudre Valley Hospital in Fort Collins, Colo. "I don't have any advice for Schmidt. I'm kind of curious to see what he'll do, though, I do have more confidence in Novell since Schmidt took over — he brings soph tion to the table. With Schmidt here, I'm considering buying Intranet Ware instead of Netscare (Communication Corn.)'s Suite-Snot running on a Unix box."

David Eldridge, a network engineer at Practice Management Resources in

Pueblo, Colo. "Schmidt does raise the credibility level, and I think Novell is becoming more open. It's such a dynamic market right new, IIn

the long term! I'm not sure Novell can Bill Rough, a senior systems administra-tor at High Way

One Comr cations. Inc. in San Francisco "Change the tarchitecture so that Intranet Ware is better able to support applications.

Right now, I'd newer run my applications on NetWare. The [NetWare Loadable Modules] are too flaky - it's a management nightmore."

Dave Devcich, manager of infor systems and services at Beveridge & Dia mond PC. a law firm in Ward Schmidt should continue on the path that he's already defined and pump up the volume. We think Novell has strong technical solutions to meet real business needs. We've implemented IntranetWare, Group Wise, nageWise and AT&T Connect Services. per month over competing solutions. That's worth publicating "G

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ternet, we used to say, 'Content le king.' Now, it's about

Retail brokerage a late entrant in cybertrading By Mitch Wagner

PIDELITY INVESTMENTS IN looking to a triple-threat strategy of content, transactions and corporate services in its effort to survive in the competitive envi-ronment of retail brokerages on

"In the age of the cyberbroker, the name of the game is to meet the full needs of the population," said Zachary Leonard, vice president of retail marketine at Fidelity Leonard helps manage Fidelity's online site. "In the early days of the Inter-

net, we used to say, 'Content is

king.' That's not true anymore. Now, it's about dynamic pro-On its World Wide Web site,

Fidelity offers clients an oppor tunity to buy and sell invest ments, ask investment questions via electronic mail, and catch up with investment news

> The site, put together by more than 200 marketers and inforon systems managers, also offers a RealAudio feed of stock prices, along with Java applets for calculating returns on investment and developing invest-

> > Fidelity, name 95

INTRANETS

Firm tests its 401(k) plan online

By Justin Hibbard FRANKLIN TEMPLETON INV

tor Services is being its own ainea pig. The San Mateo, Calif., mutual fund company is using its new intranet-based 401(k) applica-tion internally before extending it to customers later this month Users can log in with a name

and password and browne time ly information Franklin exper 401(k) plans and read quar-

pleton Investor mices Inc's Coop employees have access to a PC.

For those who don't, the comany offers quarterly informaion through a telephone voice response system and still mails out yearly statements.

Franklin expects to save \$100,000 to \$150,000 per year in paper, portage and labor on the quarterly printed statements it mails to employees. At that rate, the \$100,000 application will pay for itself in two to three

years, company officials said CLIENT ACCESS

The company also hopes to stay competitive by letting client companies access the application through their own intra-

Customers are comine to expect such services from mutual fund companies, according to Chuck Dorr, vice president at Franklin, "Everyone wants it. And if they don't have it, they want to know that you're think ing about it," he said.

Most major mutual fund companies are developing intranet-based 401(k) application said Barry Hall, a senior consul

Franklin, page 55

Online car buying isn't auto-matic yet



REVIEW Legwork still helps when car shopping By Randy Western

MY PICAUP TAUCK died two months ago after a long illness, leaving me very little time to find a replacement or pour in

another \$500 for repairs. I turned to the World Wide Web for solace — or at least for a

pared for negotiations and even

applied for the loan online. experience. I quickly found that

But it wasn't a totally virtual I also had to do some old fashioned legwork.

PING AROUND The Web was made for car shoo ping. On a car lot, you can't Sam, the Car Selling Man.

ided validation. Edmands categorizes cars as new or used, then classifies them by make, model and year wae. You can't click on the "Back" button to shut off Slick The site was very easy to navi-

I did the bulk of my rese

Guide (www.edmunds.com)

using the online version of

Edmunds Automobile Buyers

Other car guides, including

oint.com) and Kelly

Microsoft Corp.'s CarPoint

Nue Book (www.kbb.com), pro-

Learner's, cope 57

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Unicenter TNG

Fidelity invests in the Web

Fidelity was late into an already crowded marketplace. The company started of fering transactions online earlier this year, nearly a year after competitor Charles Schwab & Co. in San Francisco. And investment companies such as-Schwab have offered proprietary dial-up investment services for years.

Yahoo, Inc's search engine lists 451 separate brokerage sites, and that doesn't include investment banks and other

-

Retail investment houses such as Fidelity are getting squeezed at the low end by sanses such as ETrade Group, Inc. in Palo Alto, Calif., which offer steep discounts for online trading to customers who like to research and make decisions

Fidelity also is pressured by highend brokerage bouses that give wealthy investors a great deal of customer "The Schwabs and Fadelities of the maybe that's unusual

world are getting cherry-picked on both sides," said Lawrence Tabb, an analyst at the The Tower Group in Newton, Mass. They're losing high-net-worth clients to full-service brokers, and they're loging the inexpensive side of the market to

deep discounters. Fidelity is in a neck-and-neck race with competitors such as Schwab and Bostonbased Liberty Financial Cos. to offer online investment schemes. Online prospectuses, in-depth investment informution and transactions are standard on financial companies' Web sites. Liberty

Financial earlier this year launched a site that offers visitors customized informs tion and sales pitches based on their

"We see Fidelity as a good, solid implementation of the Web as a marketing and information-dissemination tool," said Bruce Guptill, an analyst at Gartner Group, Inc. in Stamford, Conn. "We don't see anything unusual about it. They're doing a very good job, though -

Fidelity has about a dozen E-mail customer service representatives who work shifts to answer questions 24 hours per day, because Internet surfers often keep

odd hours, Leonard said. But regulatory issues prevent Fidelity from offering discussion groups and other customer interaction it wants to provide. While regulators have yet to make an official ruling on the issue, the

interactions to written corre - which means every word on the Int net must be reviewed by legal staff. Two weeks ago, Fidelity laranched a

new rate for deep-discount trading. The Spartan Active Trader pricing is available to Fidelity costomers who trade at least 36 times per year and maintain a mi mum balance of \$20,000. It starts at \$25 for trades of up to 1,000 shares. Surindustry consensus' equates Internet charges apply to larger trades. []

Franklin puts 401(k) plan online

CONTINUED FROM PAGE 5 tant at Coopers & Lybrand in San Francisco. But offering a

better intranet application than a competitor could put a pany on top, he added. Franklin's strategy is to offset the cost of extending the application to customers with savings generated from its

"That's a direction I'm seeing a lot - developing it inside the company and then using it externally to provide more services to customers said Mellamie Hills, president of Knowledgies, a consultancy in Plano, Texas. "They've

recouned all the costs just on the savings internally, so any additional benefit they get by providing this to custotpers is just erayy

Of course, recovering the costs internally depends on whether users accept the application. But Kathie Hillier, benefits manager at Franklin, said the company has had success with a voice response system that lets employees and

customers check balances and conduct transactions on the telephone "It has saved a great deal of time, and it has taken us out of doing the mundane repetitive tasks," Hillier said. "And we look forward to the intranet doing that as

Federal law requires employers to make 401(k) statements available to em vear. O



AD101 plans on the firm's intranst

ployees at least once per year. For the time being. Franklin will mail annual statements to employees, but the compa ny is considering using World Wide Web server loss in the future. Door said.

Eliminating paper altogether would be a great relief to Hillier, whose department mails nearly 5,000 statements

Hillier's department and the graphics department will maintain content on the intranet by using Wallop Software, Inc.'s Build-It tool. That will let them accemble components from many applications through one interface

The next step in developing the appli ation is to add transactional services. The company hopes to let users transfer funds among their accounts by early next



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NICROMEDIUM, INC. has announced Digital Trainer Professional 4.1. a producti and delivery tool for interactive multimedia training over the Internet or an

Officials at the company in Research Triangle Park, N.C., said the latest version offers two delivery options: Automatic File System for downloading an entire training program in con pressed form to an employee's hard drive, and Remote File Server for delivering portions of training that an employee

Pricing starts at \$279.99

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WESS EVOLUTION, INC. has announced

two software products, Interact and InteractPro, for enabling businessoriented that and secure collaboration over the Internet According to the Princeton, N.J., com-

pany, the products help organizations set up InteractNet, a secure business collaboration network that can operate over the Internet or an intranet. Both are Javaract costs \$495; InteractPro costs

\$1,295

access

VERSAMET CO. MICATIONS, INC. has an nounced ISP-Accelerator, a remote ac-cess server that includes 48 digital 66K bit/sec. modems for high-speed Internet According to the Diamond Bar, Calif., company, the product includes a router, nications server, up to two chamnelized T1 interfaces and two high speed V.35 wide-area network in ces. The product is encased in a 19-in

Pricing starts at \$18,860 (909) 860-7968

Legwork vs. the Web

gate and had useful in-depth information, including photographs of the cars. CarPoint provided a similar range of

information Edmands gave a solid rundown on each model, including its features, performance and trunk space. And it had a calculator that allowed me to estimate a fair price for a model based on the manufacturer's suggested retail price and

But it lacked details about a car's reliability or mechanical history. Car-Point was equally weak in that area. I spent the past two years pouring money into my old car to keep it running, so

this information was particularly importent to me I turned to print, specifically the 1007 Consumer Reports Car Buyers Guide,

which I used extensively As nice as technology is, the magazine was the most portable source, was easy to flip through and had much more information on things such as the reliability of a given model over the long haul. I would have turned to Consumer Reports' online site, but it is available only on Compu-

Serve and America Online.

Once you know what you want, both Edmunds and CarPoint ease the buying experience by linking users to Auto-By-Tel (www.autobytel.com), an online car buying system that connects you to the nearest dealer that has the model you are looking for.

I typed in the make, model and options I wanted and sent it off. An Auto-By-Tel er service represer electronic mail within the guaranteed 48 hours telling me a "trained Auto-By-Tel ger" at a local Toyota dealership would contact me.

He left a message, but after I called him back. I never heard from him again. So I went out on the search myself, driving from lot to lot, hunting for the car I wanted: a Toyota Corolla station wagon. According to Edwards, Toyota discontinued the Corolla station wagon, so I had to depend on luck - not technology - to

find one. Score: Legwork, a; Web, 1. I got lucky: I stumbled onto the car I wanted: a red 1995 Corolla wagon. It was a Saturday. The dealer wanted to

deal. I wanted to run. I definitely wasn't prepared to buy that day. I had no idea what my pickup truck and the Corolla were worth. And I still had to talk to my bank I went home, logged on to the 'net and

Aid my homework Using Edmunds and the Kelly Blue ok. I found a price range for the value of the Corolla and my trade-in.

I then skipped over to my credit union's Web site, which had recently launched a secure, Web-based banking system. I applied for a loan. The score: legwork, 2; Web, 2.

LET'S MAKE A DEAL

Armed for battle, I returned to the lot on Sunday, ready to deal. After inspecti my truck, the dealer offered \$100. Ed munds and Kelly told me that a 1988 twowheel-drive Nissam pickup was worth at least \$800, even in fair condition. I also managed to translate the "dea

speak" to winnow out all those hidden costs, using the "How to Get Your Way" bargaining advice at the Edwards and CarPoint Web sites

I called his bluff. He took my second offer. Score: legwork, 2; Web, 3. But my credit union tied the score

When an Internet loan request comes in, the credit union's webmaster has to print it out and carry it to a loan officer to process. I couldn't wait, so I tried to get the loan by telephone. The loan officer went upstains, collected my online request and simply added to it the additional information I gave over the phone.

On Monday afternoon, I drove to the dealer and picked up my new car. For ease of use, the score was tied. But given that Edmunds and cimilar hooks cost about \$10 each at the bookstore, I had to give the edge to the Web.

I am sure that in five to 10 years when I do this again, I'll never have to see a dealer or a dealership. My virtual car will be dropped at my front door. [3]



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Briefs When disaster strikes

Floods, fire play up need to back up

By Matt Hamblen

CLOIS HETLETVED calls the recent Grand Forks, N.D., disasters "tragedy's Triple Crown" because his hofme and trailer home were flooded hours before his accounting firm's network systems burned to ashes.

Flooding from the Red River of the North reached its worst on April 19, forcing Hetletved and 90% of the 50,000 residents of Grand Forks to evacuate their homes.

After he had evacuated the city and found his trailer home at a country lake submerged, Hetlewed got another surprise while sitting in a friend's trailer. "I was watching the TV and told my wife, It just got worse, Helon. That's one business burn-

ing," he said.

Eleven major buildings in downsown Grand Forks burned, and the flood waters put them mostly out of reach of fire trucks. Heteleterd, a partner and director of information.

trucks. Helietred, a partner and director of information systems at accounting firm Brady Martz & Associates, said \$500,000 worth of computers and network equipment in his downtown office was destroyed. After their shared experience,

Heteroed and other users recovering from the flood said they took different lessons from the Wass disaster strikes, page 61



► Key to success: Keep GE customers coming back

By Thomas Hoffman

IM WIS 100 as chief information officer at GE Capital Services, John McKinley ties youth-

ful zeal to business acumen in a quest for commercial leadership.

Since joining GE Capital in 1995, the company has launched an average of one elec-

in 1995, the company has si launched an average of one electronic commerce project every six weeks.

EXPANDING BASE
The projects are aimed at helping Stamford, Coan.-based GE
Capital grow its customer base
in ay diversified businesses,
zanging from credit cards
to ship containers, it helps to
have someone who is a spirited

leader and a good listener to lead the charge. McKinley, 39, said GE Capi-

McKinley, 39, said GE Capital's "aggressive experimentation" with electronic commerce last year has helped the company learn what it takes to be successful in the digital com-

successful in the digital conmunity: delivering content that will keep customers coming back for more. "We didn't want to sit on the

sidelines while others were becoming successful," said Mc-Kinley, a charismatic, wisy man who is an avid bicyclist and camper when he isn't camped in front of a commuter.

front of a computer.

McKinley jumped to GE 19
months ago from Ernst &
Young, where he helped run the
Big. Six consultancy's financial

Big Six consultancy's financial services technology practice. One of the early lessons for McKieley, page 6



Grand Forks, N.D., lessons in disaster recovery

Teaching over the 'net

Firms rely on virtual chalkboard for training

By Julia King .

DO YOU AGREE?

ago deployed video capabilities across its massive corporate intranet to, deliver training to 145,000 employees worldwide. MCI Contraunications Corp., so far has saved \$500,000 in travel and overhead costs by training its far-flung webenasters over the Internet rather than in a chargement.

Lucent Technologies, Inc. said it expects to save money and boost sales by keeping its 1,500 global salespeople up to date on its products via a CD- ROM course that doubles as a multimedia sales presentation tool.

THE WAY OF THE PUTURE

The writing is on the virtual challeboard information technology is inching aside live instructors to take center stage in corporate education programs.

The challenge facing frequently reluctant informations are compared to the control of the control o

tion systems managers is building and/or upgrading a technology infrastructure that accommodates training departments' ever-expanding multi-Tarchine over the last account. Telecommuting boosts utility's productivity

By Mindy Blodgett

A PILOT telecommuting project
that Georgia Power Co. began in
1002 was meant to inspire other

1992 was meant to inspire other Atlanta-area companies to develop similar initiatives. Those companies have been slow to join up, but the Georgia Power program has been such a success — with higher productivity and savings on office space — that the utility plans to double, or even triple, its number of telecommuters this year. "The Atlanta Chamber of

"The Atlanta Chainber of Commerce asked us to put together a model program because the city of Atlants was out of compliance with the federal Clean Air Act, and they wanted to try to get some cars off the road," said Frank Boyd, the utility's telecommuting coordinator. "And we haven't looked

Telecommeting, over 6

MODITION OF THE TWO RKS

(m)

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il.

<u>s your business running at the</u> speed of Indy? It can be.

INTRODUCING POWER NETWORKS, Today at the Indianapolis Motor Speedway there's something moving fister, more reliably and more efficiently than ever before their new digital communications and computer network. A Power Network Designed by Nortel

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When disaster strikes

At Brady Martz, only one backup tape that contained payroll records was scorched in the fire — all other backup tapes were stored off-site, Hetletved said. The data on the scorched tage was recovered in the laboratories at Ontrack Data International, Inc. in Munneapolis, according to Hetletved. "Our [disaster protection] system

worked, but of course, we're paranoid now," he said. Ironically, Hetletved said he doesn't believe he will need to pay the cost of having a disaster recovery contractor on call That's a nice service, but not cost-justifiable," the accountant

Insurance will cover the lost hardware and a reliable systems dealer has put some of his lost computers - including an IBM AS/400, and two Compaq Comnater Corn servers - back in order, he said.

Rather than pay the more expensive cost of a disaster recovery contractor. Hetletved said he will set up a second offsite backup location - with both sites located above the floodplain

-Hetletred's approach to preparing for the next disaster dirges from the experiences of least two others affected by the Grand Forks flood who preded to be back in service as on as possible.

The services of SunGard Recovery Services in Wayne, Pa., allowed Grand Forks Comm ty National Bank to resume onerations 30 miles away in Larimore, N.D., four days later, said bank President Bill Lee. The bank's Unisys Corp.

mainframe was inundated with seven feet of sewage even though the bank building is well out of the floodplain, and Sun-Gard was able to bring in replacement mainframe and document-imaging machines by

At Ecolab's Pest Elimination Division in Grand Forks, the flood shut down a national service call-in center. A stream of So Ecolab service workers flew or drove to Minnetonka, Minn.

emaned media tion nd the media to a p sional data recovery fo 25 9000 M pos -Don't shake the media or

were the cover of a hard m't open the media or

-Don't attempt to opera For salt water damage drives can be bashed in dis silled water, then express pped in an airtight con

iner to a professional de covery facility. ens gear provided by Com disco Continuity Services in All told, the service was down

Rosemont, Ill.

ontrast, fell by 13%.

FEAR OF GROWTH

At some companies, IS has thwarted efforts to adopt LAN-

based multimedia training for

fear of choking the network with

for only two hours, thanks to Consisco and the flood-evasion heroics of Ecolab person meluding the division's IS ma ager, Alan Reyelts, said IS direc tor Nick Eian. "I couldn't imag ine having no backup service.

COST OF RECOVERY Analysts said off-site backup is

often overlooked by IS man ers when they prepare for disas ters. 'The network admini strator often just puts the tapes in a sock drawer," said David Casey, an analyst at Strate Research Corp. in Santa Barb ra, Calif. Annual fees to keep a di

property persons on call can be up to 3% of a total IS budget. justifying this bill depends on a company's need to have service restored within 48 hours. Casey said. D

Telecommuting efforts CONTINUED FROM PAGE 59

Georgia Power launched its pilot with 75 workers. But it wasn't until last year's Summer Olympic Games rolled into Atlanta, raising concerns about traffic, that other local companies sat up and took notice. telephone lines.

According to Michael Dziak, a telecommuting consultant at Ga., and co-founder of the Metro Atlanta Telecommuting Advisory Council, telecommuters reduced typical Atlanta-area traffic

by a third during the Games. Now, "more companies are doing permanent programs," Dziair maid

Boyd said 100 Georgia Power ers currently telecommute. In the original pilot, 15 development workers were sent home with all the office equipment

and software peeded to access the office network. The other 60 workers were sent to satellite of fices that were outlitted with high-speed T1 or Integrated Ser-

vices Digital Network (ISDN)

Royd said the utility has saved \$100,000 yearly in leased office space by sending some workers home and having oth ers share desks in a "hoteling"

Boyd said Georgia Power has seen a 10% increase in productivity among the customer service center workers who work at home. He added that those workers save a combined 250 commuter miles every day and an average of 1.5 hours daily per employee in commute time Of the professional workers who work at home at least part of the week. Boyd said, produc-tivity changes are difficult to quantify, but morale has risen. Georgia Power has started us-

where they quickly started using

nunals and telecommuni

ing the Remote Access hardware product from Ascend. Communications, Inc. in Ala-meda, Calif., Boyd said. The utility this year plans to expand its use of ISDN with Ascend ISDN

bridge devices. Boyd counsels compa considering telecommuting to closely analyze business needs, but he said "telecommuting is not for everybody" If an emplayee isn't productive in the of-

fice, he is unlikely to be more productive at home, he said. Boyd also said it is importa to "involve the IS department. Don't buy products or start a program without their involve-

ment. O

Teaching over the Internet

CONTINUES FROM PAGE SO ing platform.

In the past year. World Wide Web and CD-ROM training pro-But increasingly, the cosand productivity benefits of sograms grew by 87% and 53%, recalled "distance learning" are spectively, according to the American Society for Training and Development in Alexandria

becoming far too compell for companies - and IS - to Va. Instructor-led training, by At Seattle-based Boeing, for ex-Training is definitely moving to technology," primarily be-

ample, intranet-based video cause of the cost and time savtraining has eliminated the ings it offers, said Brandon costs associated with duplicat Hall, editor and publisher of ing and shipping several hon Multimedia and Internet dred training video cassettes to Training," a Sunnyvale, Calif. employees each week. Now workers can take managemen But IS's blessing hasn't alcourses and even post electronic ways been forthcoming, Hall

mescages in training chat rooms over the company's in Time savings is the big drive at Lucent, which plans to roll out its CD-ROM training prod uct this summer. The training will be updated each quarter and employees will receive

new product information via the Having sent the entire sales

force the same information at the same time, salespeople can then "go out Ito customers! with the same message," said Alan G. Chute, chief learning strate gist at the networking come Chute also views distance

learning as a viable way to ease problems greated by the Baney recalled hope one coming technical skills crunch.

"The pool of new workers is shrinking, and the way to address this is to retrain," he said. 'The challenge now is moving information, not pro-

McKinley leadership

McKinley and his 2.500-person

information systems crew was that when it came to the Inter net, content was king. So GE Capital began focusing on the wants and needs of specific groups such as the reinsurance

ARING INFO

For its metal-working custom ers, for example, GE Capital has added home pages for sharing nouncements and information on specific bidding situations.

In a wired co 'you're really fighting for air time on a customer's desktop, McKinley said

But despite his ardor for electronic commerce, don't expect to find McKinley fighting senior management in the boardroom or staffers at IS meetings. His leadership style emphasizes the importance of listening to other

viewpoints, observers said. John seeks out what people are hearing and thinking. Paul Daversa, president and CEO at Researce Systems Group, Inc., a Stamford, Conn.based information technology placement firm. Daversa has ren helping McKinley recruit divisional CIOs and special ejects people since his first week on the job. "No matter where you're seated, John looks straight at you, not up or down.

McKinley's, "half the success is being able to sell your ideas upward and downward, and John does a great job of doing that," Doversa said. Of the nearly LOGO CIOS Daversa has met and interviewed during his career, McKinley "is one of the best communicators I've ever met "he said II

additional traffic. At other primarily mainframe-oriented companies, IS resistance seems more political "It's loss of power," said Lucy S. Baney, president of Access Technologies Group in New Canasa, Conn. The company In a job as big and diverse as develops intranet training

> pamy's IS group was so concerned about preserving stantards that it limited multimedia training materials to those created in Microsoft Corp.'s Power-Point even though virtually all other multimedia tools would run on the company's comput-

Smart business decisions. Even smarter investment.

A riccent International Data Corporation (IJCs) study of organization that have implemented data warehouses reviets an exerage three-year Return on Investment of 401%. Theretic no batter choose for reaging smilar revierds the SAS Data Warehouse, a data warehousing Product of the Year for two years running.

And the world's only end-to-end warehousing solution for managing, organizing, and exploiting your business data—including data from external sources. Here's what two companies featured in the IDC study have to say:

MERRILL LYNCH ROIn1,464%

For this leader in financial services markets, the SAS. Data Waverhouse gived feet singulated and measurable benefits. According to John Crawford, VP of Reporting Systems in the Marketing Systems Group. We've been using SAS softween of all or an softween in terms of our data warehouse implementation, and our return or well-entergrated outdoor that provides all of our data warehousing needs from one vendor, and three's not offer sindly enterfor out there coasible of done that "

LTV STEEL COMPANY ROL-16,999%. As the first linguish deep operator in the U.S. Proy're been using SAS software for data warehousing snoze long before the farm was coined. According to Qualify Assurance Seeins charge (February 1994) (February 1994). This Software is THE element of our data warehousing solution. It best everything element of but data warehousing solution is been everything element of our data warehousing solution in the contraction of the solution obtains to bring. I constitute the programme of the solution obtains to bring.

The top-of-the-line data warehousing software

will have a positive impact on your

business decision makers.

And wait until you see what it does

for your bottom line.

SAS Institute Inc.

Browsers gain query tool ground

MREE MONTHS AGO, Delicato Vinewards' data warehouse had 20 users, all of them using client/server query tools. Today, it has 100 users, and 90 of them have web browser-based data access tools that work over the company network.

"It's as simple as redoing a license arrangement to switch from client/server to web," explained Rita Graham, manager of information systems at the Mantera Calif, winery For some companies, switch-

ing to browsers saves money. Licenses can cost less, and web tools require less support than

their client/server brethren. For others, because there is less training involved, the capability to request reports can be rolled out to more users. However, web-based tools are comp tent at executing queries for canned reports but can't always handle sophisticated ad hoc queries. So they aren't right for everyone - and most IS managers report that they expect to retain client/server tools for those who really need them. But those are probably 20% of data warehouse users, said Wayne

intelligence and data at Patricia Seybold Group in Boston "Most users have very simple requirements, such as a few static reports, refreshing an existing report with new data or changing some of the values in an existing report. All those

functionalities can run across the web today," Eckerson said. "Any vendor that has a data warehouse reporting, query or Browsers, page 64



Learn the risks of marts

SHAKU ATRE

M A SURVEY We recently conducted at Atre Group, most companies said they started with an applicationspecific data mart instead of an rprise data warebouse. But less than a quarter of them con-

respondents, participants in Atre's first Data Warehouse Certification seminar in December, were sked how they nned and imarehousing price

to the class. Users apparently believe data marts are a low-risk endeavor. There are two kinds of data marts: independent and depen dent. Most respondents build stand-alone independent data marts, which at first glance seem easier to deploy than de



only one aspect of risk analysis. You must also consider risk in the areas of complexity, integration, organiza tion, project team and financial in-

scope and ambition, a stand alone data mart may appear to minimize risk in all these cateelectric utilities: Houston Light gories. But this seemingly low risk may really reflect an absence of strategy or foresight. What happens later, when data

marts pop up across the organi-

Deregulation puts focus on customer needs By God Core es of customers. A data warehouse, built around a 20G-byte

FOR IMPOSTRIES on the cusp Oracley database on a Sun Miof deregulation, preparing for crosystems; Inc. SPARCstation competition means getting to 1000, lets CLECO examine cost know customers intimately Just and profitability breakdowns ask Ron Clark, who uses data closely across its five profit cenwarehousing technology to help ters - distribution, retail ener Central Louisiana Electric Co. gy, financial, generation and (CLECO), a \$435 million electric transmission services "Our data warehouse is p utility in Pineville, La., improve its bottom line and attract new viding managers with ad hoc. dimensional views of their

CLECO is building market intelligence for the day - which is spected to come within the next few years - when the Louisiana Regulatory Commission permits regional rivals to enter its now-protected turf. Potential competitors are Southern Cos. a combination of Gulf Coast

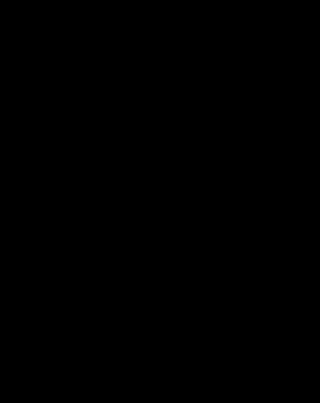
ing & Power Co. in House and Enron Corp., a Ho based energy services comp One of CLECO's priorities is to develop rate structures that attract and retain specific class

Open markets? Open a warehouse able to do that in the past," said Clark, senior data wareh

specialist at CLECO. Brio Tech nology, Inc. tools are used to generate ad hoc queries for mar keting and canned queries for fi generated on the fly. Clark said Prior to the data warehouse information systems man were able to generate decir support tables only from he wn mainframe applicati

These could, for example, g revenue figures for each m





Data Warehousing

Browsers gain query tool ground

the Steam Alexander

THREE MONTHS AGO, Delicato Vinesards' data warehouse had 20 users, all of them using chent/server query tools. Today, at has too users, and oo of them have web browser-based data access tools that work over the company network those are probably 20% of data It's as supple as redoine a warehouse users, said Wayne license arrangement to switch

from client/server to web," explanted Rita Graham, manager of information systems at the Manteca, Calif., winery, For some companies, switching to browsers saves money

Licenses can cost less, and web

tools require less support than their chent/server brethren For others, because there is less training myolved, the capability to request reports can be rolled out to more users. How ever, web-based tools are compe tent at executing queries for canned reports but can't always handle sophisticated ad hoc queries. So they aren't night for everyone - and most IS managery report that they expect to netain chent/server took for those who really need them. But

Eckerson, director of business intelligence and data at Bathon Scybold Group sh Boston. Most users have very simple requirements such as a few static reports; refreshing an ex-

isting report with new data or changing some of the values in an existing report All those functionalities can run across the web today." Eckerson said. "Any vendor that has a data warehouse reporting, query or Browsers, page 64



Open markets? Open a warehouse

multidimensional vietes of their

costs and they wire never

Deregulation puts focus on customer needs By Gad Cond

SHAKU ATRE

Learn the risks of marts

a survey we recently - pendent data marts, which are conducted at Atre Group most compenses said they started with an applicationensettle data most uncload of an enterprise data warehouse. But less than a quarter of them conducted risk assessment.

respon dents, participants an Atre's first Data Warehouse Certific cation seminar in December, were asked how they planned and implemented data warehousing prior

to the class Users apparently believe data marts are a low-risk endeavor. There are two kinds of data marts; independent and dependent. Most respondents build stand-alope independent data marts: which at first glance seem easier to deploy than de-

fed from an enterprise data warehouse that provides com-Is building an independent data mart really a low-risk endeavor? It depends on how you define risk Technology risk is

only one aspect of risk analysis. You must also consider risk in the areas of complexity integration, organization, project team and financial in-

vestment. hastine cope and ambition, a stand alone data mart may appear to minimize risk in all these categorses. But this seemingly low risk may really reflect an absence of strategy or foresight. What happens later, when data marts pop up across the organa-

Atre, page 64

competition means getting to know customers intunately just ask Roy Clark, who uses data warehousing technology to help Central Louisiana Electric Co. (CLECO), a Sais million electric utility in Pineville, La., improve its bottom line and attract new CLECO is building market in-

FOR INDUSTRIES ON the cusp.

of dereculation, preparing for

telligence for the day - which is expected to come within the next few years --- when the Louisuna Regulatory Commission permits regional rivals to enter its now-protected turf. Potential competitors are Southern Cos... a combination of Gulf Coast electric utilities, Houston Lighttest & Proper Co. in Mountain

and Enron Corp., a Houstonbased energy services company One of CLECO's priorities is to develop rate structures that attract and return specific class

es of customers. A data warehouse, built around a 20G-byte Oracle7 database on a Sun Microssstems. Inc. SPARCatation 1000. lets CLFCO examine cost and profitability breakdowns closely across its five profit centers - distribution, retail energy, financial, progration and 'Our data warehouse is proording managers with ad hoc

able to do that io the past," said Clark: senior data warehouse specialist at CLECO. Brie Technology. Inc. tools are used to penerate ad hoc overies for mus keeing and canned queries for fi nancial managers. Reports are generated on the fly. Clark said. Prior to the data warehouse information systems managers were able to generate decisionsupport tables only from home grown mainframe applications These could, for example, over greenue figures for each month



Browsers move in

CONTINUED FROM PAGE AS

At Delicato Vineyards, accountants will still use client/ server tools to reconcile prob-lems with general-ledger transactions, for example. But executives are more comfortable with the web browser tool, which provides access to predefined data warehouse reports on key opics such as past-due orde best-selling products and ton

costomers. Graham said The firm runs a rG-byte data warehouse of financial and marketing information on an Oracle Corp. database using Brio Techlogy, Inc.'s BrioQuery 4.0 client/server tool and its brio. web warehouse. Web query tool licenses cost \$395; client/server licenses cost \$795.

Concert Communications Services, a London-based strateg partnership between British Telecommunications PLC and MCI Communications Corp., has a financial data warehouse that runs on an Oracle database with about 13G botes of data and uses MicroStrategy, Inc.'s DSS Agent client/server tool and DSS web tool. Simon Bland, senior manager of business sysems at Concert's Reston, Va. office, said an users have client/server tools and 40 use web tools. Bland said he expects the number of web users to expand four to fivefold while the number of client/server users re-

mains the same. Growth at plenty of other firms will be on the web, as well,

We're not using too many web-based tools yet, but we will be moving in that di- in functionality rection for ease of use for supervisors who are just looking at canned reports said Dianne Denson. an information tech-

nology departs iness consultant at BP Exploration Alaska, an oil exploration firm in Anchorage. "Probably 50% of users don't need to create their own queries land efore can use web too

and it may be 60% or 70%." BP Exploration uses a data warehouse that must on an Oracle database for maintenance on everything from oil-water sepa ration facilities to living quarters. Queries of its 8G-byte ouse revolve around keep ing track of budgets, labor

analysis tool is moving it to the hours, materials, scheduling and planning. About 500 users have Brio client/server tools and about so are using Brio web tools. Starting in June, web tools will be rolled out to most users over six months to a year. "We probably will work out an agreement with Brio to trade in some client/server tool licenses for web tool licenses," Denson said. Another user shifting to web tools is Footbill-De Anza Com-

munity College District in Los Altos Hills, Calif. It has 40 chent/server users and 12 web users, but the number of web users is expected to climb to 60 by fall, said Jim Lucas, director of institutional research. "Up to now, we've done our review work with a client/server tool. But now we're switching a lot of people to the web because they're all getting the same kinds of standard reports. The web is simpler for IS because

and it's easier for users because they get information through web browsers." Lucas said. The two community colleges which together have \$8,000 students, use Brio tools to access a 4G-byte data warehouse. Queries are designed to justify funding requests to the California ity College Chancel lor's Office and typically involve analyzing revenue vs. costs, stu-

there are fewer access problems,

dent demographics and demand for various college courses. Chapman Gleason, systems per at the Environmental otection Agency's Center for ironmental Statistics Washington, said he likes web

query tools because The differences they require less support on the client side. In contrast, be the teds mate between web and ent/server tools require about 40 hours of support per year per user at \$50 an

hour in labor costs. But client/server tools, which recently became available to EPA users, have und favor with power users and Gleason said he expects 20% to 20% of users will want them. That means the use of web tools is likely to decline from 90% now to 75% to 80%. Although maintaining expertise on both web and client/server tools is inconvenient, he said.

it is inevitable. The EPA has 530 le using SAS Institute, Inc.'s client/server tool and SAS/IntrNet web tool to access a

Product sampling

nebwarehouse, Brio nology, Inc., Palo Alto. Calif - DSS Web, MicroStrategy - htmSQL SAS institute

Inc., Cary, N.C. -IQ/LiveWeb, IQ Software lorcross, Ga. Hewlett-Packard Co., Cupertino, Calif. Warehouse, Oracle Corp Redwood Shores, Calif. -- Web.eql. Sytese, Inc.,

Emeryville, Calif.

new data warehouse running on an SAS database that eventually will hold 25G bytes of data. But the distinctions between web and client/server overs tool functionality - now weighing in favor of client/server - will soon disappear, according to Eckerson. "The web is evolving very fast, and in 1998, you'll see some degree of equivalence in what you can get with web and client/server tools." That should be possible because, as Java ma-

tures, downloadable Java applets will be able to perform many of the same functions as today's client/server tools, be said. It is unclear whether that would raise the price of web tools. []

to oo seconds once the data Alexander is a fredance writer in warehouse sets a star otherss. A

Open markets

of a two-year period, but that didn't solve the problems at hand. "What if someone asks me. Who is the biggest custom-

er in Wells Parish? ... That is something which takes an hou and a half to run," said John Jarrell, CLECO's lead load-research analyst. Armed with demographic

data from Equifax Corp. in At lants, marketing analysts can zero in on customers based on their nine-digit ZIP code. That lets managers retrieve data from one of 50 demographic group ines in the warehouse

One such effort sought to lure gas water heater owners to elecric. "We use the data ware house to oull names and addresses to make labels for various targeted individuals." larrell said.

Although the work is promiing, CLECO has yet to cost-justify and measure the data warehouse's effect. But even if it can't quantify the impact, there are qualitative differences. Managers have more summary data at their disposal than before. 'The tables are much better organized than they were," farrell said. Getting at data takes about one and a half hours, but CLECO expects to cut that down

see more summary tables, pro viding quicker access to data while giving financial managers access to more-detailed data stored in fower tables "Pulling information

multiple sources which are not themselves consistent with each other and bringing them into a consistent model is a very difficult part of the job," said Henry Morris, research director of data warehouses and applications at International Data Corp. in Framineham, Mass

CLECO uses data extraction and propagation tools from Prism Solutions, Inc. in Sunnyvale, Calif., that follow business rules to move operational code in homeorous tables and files to the warehouse, Clark said. CLECO also hopes to use the ata warehouse to target new bome contractors. "Getting input from us is the best way to

help them conserve on the use of electricity," Clark noted. Data warehousing, however can't crystalize the uncertainty of deregulation. "Our biggest obstacle is still not knowing where everything is going to evolve," Clark said, "The big if" in all of this is the direction (in which) the regulatory comsion is going to lead us." []

Core is a freelance writer in Son star schema allows end uners to

Atre: Learn the risks of data marts

zation like mushrooms? Some of our survey respondents said they were implementing multiple data marts because it was too tough to model the enterprise or overcome the departmental politics of data ownership. Those issues probably won't go

Eding Minn

Risk escalates when you build a senes of data marts. You may create disparate data marts. The incompatibility usually arises not because of hardware/ software incompatibility, but because the data marts were created with different models of business processes and data definitions. The finance depart ment doesn't necessarily define the term "rustomer" the way

As a result, you won't be able to compare data from one data mart with that of another. Furthermore, as data marts proliferate, each probably will

marketing does.

need to access the same oners tional systems, and that will lead to a smart of partially duplicati data feeds and a variety of data transformation schemes. Data duplication gets expensive in terms of storage and manage ability. One 20G-byte chunk of operational data, replicated to a half-dozen data marte and aug mented by indexes, meta data

crate bundreds of gigabytes of data mart data. With dependent data marts, the data is consistently defined.

A central warehouse facility extracts and stages the data and feeds subsets of it to the va data marts. But this is difficult. You first have to build an ente rise warehouse and create data

and summary tables, could een-

marts that exploit it. There is an alternative. You can approach data marts with enough discipline to make sure that each data mart is modeled consistently and sees data the same way. Then, at the same time or after you've built a few data marts, you can build an enterprise layer to handle common services. This central facili ty will feed the data marts. To accomplish this, you must ap proach data mart development 'architecturally."

The lesson is that you don't limit risk by ignoring future re-quirements. Data marts usually won't succeed except as part of a strategy. Until you have evaluated the overall risks of data ware housing and found the best war to meet your objective, don't start that pilot project - no mutter how safe it appears. O

Atre is gresident of Atre Group. Inc., a consulting firm in Port Chester, N.Y., that specializes in data werehousing and database technology. Her E-mail address is

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To lead, you need followers. That's why & culture is a strategic asset,

Managing

he research and trading unit

By Gary H. Anthes

of NationsBank Corp. is migrating its 1.000 PCs to Windows NT. But one stubborn user hasn't even moved to Windows 95, because he refuses to give up a 5-yearold software package called Lotus Symphony.

The bank's inform ation systems department won't make the user give up Symphony - which runs under Windows for Workgroups - but it does have a migration plan in mind for him. Over time, a cost-accounting system will allocate the cost of supporting Windows for Workirroups to fewer users.

'We can't force him to migrate, but we can point out that the cost of supporting Windows for Workgroups may go from \$50 a month for each of 50 users to \$1,000 a month for one user," explains Rick Shope, manager of PC technology and planning at NationsBanc-CRT. "His manager will say, 'You get off that, because it's costing us \$12,000 a year."

Enforcing compliance with corporate software and hardware use policies by forcing recalcitrants to open their wallets is one of many strategies IS managers use to cope with the rising costs of desktop support. Some measures are mechanistic and draconian: One large company removed the floppy disk drives from 6,000

IS managers employ many techniques to get users to comply with PC policies and help cut desktop support costs.

PCs because employees kept installing unapproved software. But most IS managers say a combination of carrots and ments, Malik says. sticks - plus carefully nurtured relations with business unit managers and support from corporate management — is key to getting compliance with PC pol-

icies and standards Unum Corp., the Portland, Maine-based insurance conglomerate, takes a no-nonsense approach to PC use policy, starting with its refusal to use the term "personal computer." Bob Malik, senior vice president and chief information officer, explains, "These workstations are

really little mainframes, and as mainframes they are [subject to] certain standards and policies." Unum has a common policy that prohibits employees from installing software that isn't on a list of approved products. Violations are detected by software that scans the company's 8,000 desktop systems, looking for unsanctioned items. The scanner also helps ensure compliance with software license agree-

Unum has a CIO in each of its major business units, and they must approve exceptions to the software policy. Malik resolves disputes or doubtful situ-

ations he says.

TransAmerica Corp. has 13 maor subsidiaries, each with its own PC policies. But the company is moving toward more global standards, says Judith Goodman, director of technical services at the parent corporation in San Francisco. The move was prompted by

demands for greater interoperability, a desire to reduce support costs and the hope of getting better volume discounts on purchases, she says. Goodman says TransAmerica

gets good compliance from its users by guaranteeing them superb technical support, but only " if they adhere to standard configurations. "When someone calls our help desk, we have

someone at that customer's desk within five minutes," she Goodman's IS group has a written service-level agreement with internal customers that

pledges things such as off-hours access to technicians via beep ers. Goodman says drafting the agreement helped highlight and reconcile differences between what users expected and what IS felt it could reasonably provide. Experts advise forging three

way partnerships among IS managers, end users and users' managers. "If the partnership is there, and it's based on trust. then the standardization of PCs and software will be easier to implement, enforce and maintain," says Robert A. Zawacki, a professor of business and tech nology at the University of Colorado in Colorado Springs.

....... Ditchfield admits. "We can't mands of users and his ob watch employees and see that they don't have Bingo One up in their spare moments." Malik says policies can be enforced. But he concedes that " 'Just say no' is not the appropriate response today, especially to the power users. We have some users who are very, very sophisticated, and you have to respect that knowledge." th 7,200 employees, there

tion to control costs. The bank's traders are especially difficult

because of the esoteric work they do and their constant quest to find better tools, he says.

4- Judith Goodman, director of technical pervices, Tr

will always be some who disagree with corporate PC-use licies and some who say the policies limit their "empower-

But Unum gets good policy buy in by having the policies tailored to an overarching IS strategy developed by a broad coalition of IS and user managers, including the company's chair

"So then everyone knows that we are not just picking a tool set." Malik says. "We have a strategy that the businesses have approved, and they can see we have a vision for where we want to go."

AT MERCY OF 'THE COURT'

Shope echoes the lament of many an IS manager; he says he feels caught between the de-

But Shope has a realistic attitude perhaps not shared by all

"I would like to have the ability to strong-arm what goes on the machine," he says. "But you have to keep your rapport with

users, and the people in IS have to realize that we are a cost center, and the traders are making the money

Goodman agrees that IS must remain flexible

"'Just say no' is not the appro-riate response today, especially to the power users," the save "We have some users who are very, very sophisticated, and you have to respect that knowledge."

Anthes is Computerworld's senior editor, special reports.

Sherry Irwin, president of Technology Asset Management, Inc. in Mississauga, Ontario says a growing fear of software piracy investigations and litigation is spurring attempts to impose tighter controls over what users have on their machines.

"Senior management is concerned about this, and it's giving some individuals mandates that they wouldn't otherwise have,"

she says. Shope says he tries to accommodate requests for the use of nonstandard software as long as those requests have been anproved by the user's

siness unit manag er. He also tries to help users avoid unexpected consequences of their actions

For example, nonnoftware may be loaded on a user's local hine only. But Shope advises that any data generated by those systems, which aren't backed up by IS, be replicated

on network servers, which are backed up. Progressive Insurance Co. in Mayfield Village, Ohio, segments its employees into two classes and maintains PC software policies appropriate for

each. About 7.000 "transaction al workers" are networked and tied to the company's legacy systems, and they have relatively strict standards for their welldefined work routines.

In fact, the transactional workers soon may have even stricter, de facto, standards. That will occur naturally as their software moves from their desktops to servers when the company

converts PCs to network com puters during the next several years, CIO Allan Ditchfield says. On the other hand, Progres sive's 2.000 "knowledge work-

ers" work more independently

using spreadsheets, word pro-

cessors, the Internet and per-

haps data mining and modeling software. Dischfield says.

Standards for this group are

loose," and requests for non-

standard software often are an-

proved as long as IS procures

and installs the software, he

says. "These policies are ne-

ver [completely] enforceable,"

"[AMP's policy] board is a nonemotional, due-process way for nions aired." people to get their differing opl

, CIO, AMP -

oits — also offers a way for the CIO to og seen as the tough guy. "The board

The \$6 billion AMP, Inc. in Har

onjoys excellent compliance with its p the use of its 12,000 PCs, CIO Ren Ve

support. "We have a systems policy board to the CEO and chief financial efficer on it, so there's a lot of teeth in the standards," Van-

AS CRU, varice creams the postcy beard, but the CEO is actively involved. "He wants to be part of it because he is a big believer in standards," Vance says. "Both the CEO and CPO are big sup-



Boys'club on campus?

No knack for hacking leaves women feeling left out in computer education and an inability to hack fibe the guys be deterring women from choosing 18 as a career? Jane Maspolis thinks so. Margolis, a visiting re-

Jane Margolia thinks to.
Margolia, a visiting research scientar at Carnegie Mellon University in
Pittsburgh, is two years into a research grant from
the Sloane Foundation.
She is studying My fet
male college students stick with, or abundon, one of
the areas of study that often leads to a career in infor-

mation systems. Margolls' findings are based on intensive interviews conducted each semester with women at Caregge Mellon who are majoring in computer science and other IS-related disciplines. Her objectives are straightforward: Find out why fewer women than men are earning computer defreed women.

grees, then my to do something about it.
Margolis and other experts any
that since the figures peaked in
1954, there has been an overall decline in the number of men and
women who seek degrees in computer acterize and related fields. Statituties from the University of Callitamis-friene support her view In the
mail-spön, 595 to 1956 of backelor's degrees in computer science
went to women; that has since

dropped to 15% to 20%. Margolis says the freshman class at Carnegie Mellon has 95 computer science majors, and only seven
of them are wunter. Among sophomores, there are
an women out of 140 computer science majors.
"Inonically, many of the women in the [computer
science] program get Ks and regularly make the
dean's list, and they still don't think they're as munt-

as the guys," Margolis says.

So what guyes? That dol bugaboo — the stereoxype
of the SuperNerd Male Hacker able to crack Defense
Department computers with a single keystrock,
codowed with computers know how far beyond those of
mere mortal women — seems to be keeping women
out of computer majors, Margolis says. And the
women is her study agree.

"Computers aren't something I grew up using even waking minore like the guys in my dasses, so I find it difficult to keep up. No matter how long or hard I study, I always feel like I'm behind, because things like programming and hacking come so naturally to them," says one undergraduate who requested anomymist.

ould a lack of self-esteem and an inability to hack the the gave be deterring women from choosing IS as a career? lane Margolis thinks so, in her classes are

search, says the guys in her classes are friendly, but often like to make jokes at the expense of their female classonates. "It gives them a thrill to assert their superior computer prowess or



BY LAURA DIDIO

hacking capabilities, 'she says.

But at a New York university, joking crossed the line to hazing. A female computer science undergraduate who declined to be named found herself

the object of a "hacker's hazing rituals."
"They trashed my computer, uploading nonlethal programs that would flash dirty pictures every thousand keystrokes, reset my configurations, and rear-

sand keystrokes, reset my configurations, and rearrange and delete my files. I was in tears. The guys thought it was a riot," she says.

Lin Chase, who just completed her

Un Chase, who just complete ther doctorate in conguer science and robotics at Carnegie Mellon, says the sheer a saio of men to some in 18 is adunting. Chase recently attended a lecture by James Gosling, vice president of Sun Microsystems. "It was 99% men Jin the audience] I know I belonged, because I'm a competent computer scientist, yet 1 feit like a

foreigner in my chosen field, "she says.

Margolis hopes her National Science Foundation
grant to rus summer institutes for advanced place
ment computer science high school teachers will be
a first step howard getting inner women to earn computer
science and other pre-15 degrees. Only 16% of
those now taking the advanced placement computer
science text are Genule. In 1959, the text will be
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en in C+-, "the hacker's language," Margolis say, The grants have begold. The first is to refine the C+- knowledge of women teachers, there pass those C+- knowledge of women teachers, there pass those costs of gifts in computer science cleansoness and bloometers. The second goal in to convicace women that they don't have to be hackers, or even have say, and have a successful career in Et. "We wort reverse the side of women in computer science and they as successful career in Et. "We wort reverse the side of women in computer science and they do that they would be successful and they are successful career in Et. "As wort reverse the side of women in computer science and they do that they would be successful and they are successful career in Et. "As wort reverse the side of women in computer science and they are successful and they are successful and they are well as the successful and they are they are they are the successful and they are the successful and they are they they are they they they

Di Dio is Computerworld's senior editor, LANs and operating systems.



In Total Protection: Trend Blocks More Access Points Than McAfee

In Performance: Trend Products Are Faster Than McAfee's

In Usability: Trend Products Are Simpler To Install And Manage
Than McAfee's

In Technology: Trend Builds, McAfee Buys Its Core Technology

In Time to Market: Trend Leads, McAfee Follows

In Detection: Trend Outperforms McAfee In Independent Reviews

In Windows NT Protection: Trend Has NT Products At Every Level, McAfee Is Missing Key NT Developments

In Customer Priorities: Trend Specializes In Anti-Virus, McAfee Diversifies

In Server Solutions: Trend Focuses On The Server, McAfee is Still Tied To The Desktop

In Value For Money: Trend Sells, McAfee Leases

In Strategic Partnerships: Trend Products Are Recommended By Internet, Mail And Server Leaders, McAfee's Aren't



Complete Virus Protection for the Enterprise

Thirsting for knowledge

PETER G. W. KEEN **CULTURE:** THE

FORGOTTEN ASSET



he main source of sustainable competitive advantage through information technology is the most neglected: the IS/culture. So much attention is given to the CIO as the strategist, leader and information magician, it's as if only the general matters not the army. The IS organization is being marginalized.

issues regularly highlight the alignment of 15 with business; the difficulty of recruiting and retaining ever more scarce technical talent the importance of IS building relationships with the business. and so on. But the surveys generally make it sound as if IS is a problem, rath-

er than a asset. Scattered across my bookshelves are several dozen books about power through people and about organizational culture as an asset. I can't find any books about power through IS people or the IS culture as an asset. So firms invest and invest in IT, often with disappointing results. It makes much more sense to invest in the IS preanization and build a culture, not a collection of jobs and tasks.

I don't recall the senior business execsitives I've worked with in recent years expressing an interest in their own IS unit

Yes, surveys about key CIO and CEO - roles, skill base and career develor ment issues, priority-setting and, most of all, its relative importance as a competitive asset. They talk about every other aspect of IT as a competitive force. They almost always have questions about the CIO's role. But IS as an organizational resource seems far from their thoughts.

That absence of attention, interest and understanding shows up whenever there's a crisis about IS costs or the CEO moves on to another company "Fixing IS is seen as equivalent to hiring the "right" CIO.

FOR COMPETITION'S SAKE Surely, though, it's the IS one oriately structured and led - that will be the source of sustainable advantage in the competitive use of IT. We routinely recognize the role of culture in the success of firms such as Federal Express

and the competitive edge McDonald's creates through its organizational pro-cesses. It should be easy for a competitor to copy McDonald's decor, menu and procedures - hamburger is hamburger but you can't copy the culture, process and the leadership's almost religious ent to maintaining the culture advantage. The same is true for other exemplars of how to make and keep a com petitive difference, such as Wal-Mart, aM and Merck. It's common sense, then, that the IS culture will be the primary element of competitive advantage through IT for many years to come. Every firm has access to the same technology; there is no proprietary source of advantage here, unlike the situation when large firms could exploit economies of scale in private networks. There's a despesale shortage of people in just about every area, ranging from old-line year 2000

knowledge to Java maestros. The issues for IS success this year remain the same as in 1967; design excellence, project management and coordination of relationships - but with the same unacceptably high failure rate.

GETTING CONNECTED Firms seem to resard the IS skill short

age as a "hiring" issue: Find and keep the right bodies - and fast. The mood among many IS professionals I meet seems to be one of quiet resignation. They aren't into recreational whin but more and more of them don't feel connected to what's going on. Business They need far more real education, not just technical training. And they lack a sense of involvement in the think planning their CIO is dealing with. Competitive advantage, mission-crit

cal, return on assets - CEOs, CIOs and human resources managers need to use those words to describe the people and the culture of their IS organ rather than just the technology. O

Keen can be contacted at provinceerbeen.

"You owe it to yourself to evaluate

IBM's DB2 Universal Database 5.0."

-Infoworld, 4/28/97

If you're rearching around for the right database englas, a bet of legwork has been done for you decode a deeply at www.ofwner. But not by an After evaluating the beta version, independent and respective or IBNs 1082* Universal Database 5.0 as the new hig player on the competitive database excers, for how well it handles both traditional and complex data. With comments like, "Beta two find more muscle, great looks in IBNs revemped database" (PC First, 3/31/97). Also on the above site is the Bloor Report—an independent study comparing DR2 for Windows NT* to Mercoult* 501. Server in exhability, porformance and reliability. And a revealing Computerworld continuer existencion mody of distributed DBMS vendors. Visit the size. Read the Lianet news. And right now, while 5.0 is in beta, downhood a free trial topy of DR2 for NT and form an opinion of your own.



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ALLIANCES

Stressed out,

IT turns to third-party solutions

Today, IT managers are stressed our but good. And for good reason. They're under tremendous pressure to quickly assimilate and deploy new technology... at a time when the resources allocated to IT are skiniking, their responsibilities are growing, and, no top of everything growing, and, no top of everything clse, they have their hands full trying to solve their organizations' Year 2000 problems.

As a result, more and more IT managers are offloading some of their immense workload by turning to providers of third-party solutions. It's a trend that the vendors themselves support, since they realize that resellers can help cut their costs too.

According to many of the IT

managers surveyed earlier this year by the Information Management Group (IMG) of Computerworld Inc., solution providers will play a bigger role in their companies' plans in the future.

"Assimilating new technology into an organization takes a minimum of two years to learn and an average of five years to implement. Unfortunately, many companies only have 12 months to get the job done," says Rich Mikita, who heads IMG. This dilemma is driving the move to third-party solutions. To keep on track and on budget, IT has no choice but to outsource.

Little wonder, then, that thirdparty providers are increasingly being utilized for every facet of the JIT operation. What's more, the Stope of the projects being assigned to third parties is expanding. The opportunity for resulters has shifted from workgroup- and departments raized projects to an enterprise-wide onc. (According to the survey, 62% of the respondents said that the scope of their third-party projects is enterprise-wide).

For example, at the Department



of Ecology for the State of Washington, the size of a project determines when to call in a third-party provider. For instance, if a project is agency-wide and involves more than one of the 10 programs that comprise the department, "that is when we bring in the troops," says our server migration deadline goals, get up to speed on Windows NT and still continue working on existing projects."

An added bonus, says Fears, is that solution providers also create the necessary documentation, offloading yet another task from the

Most outsourced projects currently involve networking, applications and internet/intranet products. What services are solution providers used for?

meet commanly cultocarded services at 25

cod service at 18%

Daniel Fears, whose business cardreads computer information consultant even though he is a full-time department employee.

Currently Fears is two months into such a project, which involves migrating the department's servers from a Novell NetWare covironment to the Windows NT's operating system. The task involves 5 describes and JADO IX-s spread across four regional and six satellities offices— and it also requires rolling Windows NT out to an output of the project of th

"We wanted to roll this out quickly, but didn't have the expertise on hand," says Fears. The two third-party solution providers, he outes, "are the reasons we can meet

Solution Providér (MSP).

More users are turning to third-party solution providers. But few

But few
vendors mind.
They realize
that resellers
can help cut their
costs too.

up the experience by saying, "Bringing in consultants buys you time." Newport New Shipbaitling in Virginia also required the help of an outstade company to accomplish an coterprise-wide project. The 18,090-persoo facility had to upgrade its octwork, and needed help rolling out Microsoft

overworked IT department. He sums

Exchange, Microsoft Office Professional and Windows NT.

The company turned to Stream international, an MSP in Arlington, Va. "When you're told to install a newly-released version of an operating system for your company and you know you don't have the skills and expertise you need in-house, that's when I call for help." says Dana Isaacoff, manager of information systems architecture for the shiphailding firm.

Stream International configured the servers for the network and partnered with a second MSP, Metro Information Services, to install Windows NT. The entire project took nine months and could not have been completed in the timeframe without the help of the resellers, according to business manager Greg Kunsch.

Not a threat

In some cases, IT saaff members feel threatened when a company brings in an outsider to help on a project. However, the relationship between Newport New Shiphuiding and its third-party provider is "finitiattic — the exact opposite or threaten," says Issaeoff. "Bringing in other than the continuational actually raised the level of discourse in our organization," she says. "Our experience has been evy positive."

Originally wanted to do a volume buying agreement, Newport News checked with Microsoft, which referred Stream, which in turn found the second MSP. But without getting a reference from a vendor, how can an 1T manager be certain that a third-party provider has thoroughly trained personnel? Most vendors have begun certiMicrosoft Solution Providers are the most recognized of vendor affiliation programs amon the 225 IS professionals surveys



~4

The scope of the reseller opportunit

projects to an e opportunity:



Third-party solutions are been more popular with all sizes of commercian



Source for all charts: H4G

fication programs to verify a thirdparty provider's claims to a specific product experies. Microsoft's Tigorousa verification process (see sidebar) guarantees a match between companies looking for Microsoftbased solutions and those who are experts in its software products. According to Microsoft, its MSPs provide' the strongest link possible between technology and business."

Microsoft's efforts have been

welcomed by companies, because certification is a key criteria in their selection of a third-party provider. "When, our project involves a Microsoft product, we want to know that our consultants have Microsoftapproved skills," says Fears.

approved skills," says Fears.

And as the role of solution providers grows, that kind of knowledge is one way that today's overworked IT managers can reduce their soaring stress levels.



making BLT pizza,

Collemin From Schilters emangers have diversity center and preparent chaining on more of their time, you seek just dept of their time, when you sell you did put for the Supposing on the Sur-Nike is the problem that Exellect ten., Microsoft Schilders Pers Schild



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Buyer's Guide

PRODUCT TO THE IN THE

DBI GESS! f you think the Internet is packed with buzzweeds and

FUD (that's fear, uncertainty and doubt), imagine being a manager in the database group — they've been dealing with

that type of "buzzfud" load for years. And the next year or so doesn't promise any relief from the DBMS hype.

Database managers a decade ago endured intense arguments such as "relational vs. hierarchical." Today they wade through dueling benchmark claims and disputes over who has the right approach to parallel processing, objects and Web enablement. Then tiey fend off end users who needed those davanced DBMS capabilities yesterday.

In this Buyer's Guide, users can peek into the future of DBMS, with the help of several industry analysts (page 78): IS managers rate their DBMS suppliers (page 74), with BM's A5/40-or group showing remarkable strength; and our test lab partner, Client/Server Labs, takes a look at one of the emerging universal servers, the beta release



of IBM's DB2 Universal Database for Windows NT (page 76).

SCORECARD

IBM dusts competition in DBMS field

By Kevin Burden

pen or proprietary DBMS? It's practically a nondecision for most users in these days of open systems. But let it be known that users of system built in to IBM's AS/400 rated their satisfaction far beyond that of Informix. Microsoft. Oracle or Sybase users.

Does that mean something gets lost on the way to openness Definitely, saye Tim Minahan, vice esident of information systems at J. A. nes Construction in Charlotte, N.C. We tested a number of back-end databases, but none performed as well as our AS/400," he says. That's because distr uted databases such as Oracle and Microsoft SQL Server were designed to run on many platforms, whereas the AS/400 is a tightly integrated package. Sure, there

are many more benefits to an open sys

ase than just performance. But for the right application, AS/400 users say their database can't be beat.

Commuterworld surveyed 1.205 distrib uted database users to measure satisfaction levels with their database and their DBMS vender. The results, drawn from a quarterly customer satisfaction survey (CW. April 21), focus on the top five DBMS vendors: IBM. Informs: Software Inc., Microsoft Corp., Oracle Corp. and Sybase, Inc. The mail survey asked te-

spondents to grade their vendor in areas such as software quality, service and support, reliability, comfort with vendor-and overall satisfaction. oo's built-in DBMS, now known as DB2/400, makes its high satisfaction grades all the more remarkable because the user cry of the past several years has been for more open systems. Yet once all the user satisfaction grades were tallied, DBz/400 dusted the competition in eight of so categories. DB2/400 scored highest in overall sat-

isfaction. Nothing came close to its overall grade - except for the ratings from other IBM users who run a mix of DB2

Users say DB2/400 installs literally with the touch of a buttoo, supports sinele or multisystem environments on a local or remote basis, requires little main

mce and delivers very high availabil - Carnegie, Pa. ity. During the rare occasions when it goes down, its automatic recovery feature pinpoints where it was when the power went out, which "promotes on many platforms.

data integrity, probably the most important atwhereas the AS/400 is tribute of databases. a tightly integrated Minahan cave We tested others. package like Oracle and Micro soft SQL server, but DBa/400. You appear to lose something

when you go open," Minahan says But what makes DBz/400 so right for certain applications makes it unusable for others, says Bob Bryant, 1S manager at Scott Paper Co. in Dower, Del. "We use it for financial, project management and some transaction processing," he says. "But since the AS/400 is not a graphics machine, it's not right as a decision-

support system." That's one of two catepoties DB2/400 didn't win. The other was the handling of complex objects. After IBM's offerings, open syste tabases from Microsoft. Informs and Oracle bunch up with similar ratings for owerall satisfaction and in the categories of software quality, service and support,

and reliability

In general, Oracle scored the best of and extremely weak in transaction pro the three. Although its overall satisfaction was lower than Microsoft's and In formix's, it scored slightly higher in mos categories. The exception was cost of ownership, where it scored a dismal 3.27. [Oracle's] initial cost was much higher than Sybase and Ingres, which we con-

sidered. Unfortunately, we were running an application that required Oracle - we had no choice," says Ion Paylakovich, IS manager at Union Electric Steel Corp. in In addition to its initial cost, Oracle is a

memory hog, and it Distributed databases currently doesn't allow data backups without a were designed to run costs.

fleet of disk drives, according to Pavlakovich. All of which translates into high operating which users most likely thought about when grading their overall satisfaction," says Donald A.

neither seemed to have the strength of DePalma, an analyst at Forrester Research, Inc. in Cambridge, Mass. But the pending Oracle8 may bring some cost relief, at least in the amount of memory re-

quired, he says. Microsoft which offers SQL Server as its primary DBMS, held a slight advantage in overall satisfaction over the other

open systems vendors. But other than overall satisfaction, Microsoft's grades didn't show it to be significantly better or worse than the others. It did score well for cost of ownership. and users appear very comfortable with Microsoft as a database veodor. But its scores for reliability, service and support. and its treatment of complex objects, though strong grades, only equal that of its competition. And the results show Microsoft to be less than stellar in scalability

If there was ever a case where the hardrare makes a difference, it's with Microsoft, Users of Compan Computer Corp

systems consistently graded their satisfaction with Microsoft higher than users of other platforms For Informix, it's a case of "hit them where they're not." Microsoft's weakness

is one of Informix's greatest strengths -transaction processing. But Informix struggled in the areas of decision support, its handling of complex objects and the general comfort users feel in doing ess with Informix. Still, Informio may be another example where the hard ware makes all the difference. Its satisfaction grades were lower than other vendoes', but users of Hewlett-Packard Co. systems tended to give Informix more fa-

Sybase floundered in every category.

coming in dead last in all but one

vorable grades.

Among the many functionality rea for the low user satisfaction, the one that most nags Rodney Ito, a senior systems analyst at Arizona State University in Tempe, is the lack of common administration and integration among Sybase's three database products. SQL Server SQL Anywhere and Sybase IQ. "Each has rent installation and adr features, and there is no way to send a single query to search [all of them]," he says. Sybase has announced plans to unify Its databases through an architecture it calls Adaptive Server, which is also an at-

tempt to get near the same plane that Oracle and Informix are on with their universal server technology. But for Ito, it may be too late. "We're already looking at alternatives" he says (1)

Burden is Computerworld's senior re-

Software quality Overall satisfaction Cost of ownership

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PRODUCT REVIEW

DB2 for NT solid, but rough around edges

Tests by Client/Server Labs and Computerworld show object support has potential

By Garrett Michael Haves

breed contempt - it can also breed assumptions. In bring-ing their ambitiously named Universal Database et to the Windows NT arena, IBM's levelopers may need to examine some of the assumptions they have carried with

To get an early view of the direction IBM is taking, Computerworld hired Client/Server Labs to look at the third beta release of DBa for NT. What we found under both Windows NT 3.51 and 4.0 was a system with a stable core of traditional DBa power, along with some very interesting potential features. It was hampered, though, by more rough edges than we might have expected for a ma-

DB2 has been a standard in the IBM systems market for quite some time. Flavors of DB2 are found on platforms such as IBM's RS/6000 and AS/400. With the DBa Universal Database product. IBM seeks to increase that presence in two important ways: by expanding DBa's range of platforms and enhancing its

ng capabilities. The addition of very promising adstrative tooks. which unfortu nately were still in a fairly rough state when we tested them, bodes well eration The inch. sion of Data Type Extenders for text. image, audio and video information is even more important for enterprises where information require

ments cross outside the traditional "rows and columns" limits.

The installation process for DBa was among the simplest we have encounbase DBa package took about seven minutes, not counting the time we took to create a special ID for administering DBa — it doesn't like user names longer than eight characters, such as "admir trator." Installing the extenders took an other five minutes or so. Unfortunate the installation process isn't compl by the graphical installation utility. The

software was installed but not activated. IBM expects installers to complete the activation of some parts of the software manually. That expectation may not he well-received in the NT environment. It's more often assumed that an NT installation program will clearly present full instructions, if not actually perform all the necessary

In this case, the administrator must run an "enabler" program and then edit the system's start-up

scripts to run NT Platform tools

A key component of IBM's drive to popularize DBa on NT is the creation of a set of administrative tools not available on the current weres DBa Universal Database was designed to run directly on the server or remotely across the network. Some of the major pieces IBM has prepared for the adminis-

trative puzzle are Control Center, Command Center, Script Center, Alert Center Data Type Extenders. Text Extender and Image, Audio DB2 Universal Database and Video (IAV) Extender. Follow ing is a description of each, along with observations about

Control Center Offers a stable core of traditional DB2 Control Center is the core of active ministration for a DRa Universal Database installa-

ative tools still need work tion. This utility Control Center is somewhat buggy was designed to allow the adminis trator to create .ee move, start, stop or edit just about every aspect of a DBa server. The administrator can create something as major as anoth-

er running copy of the database engine or as detailed as user-defined functions and user rights. About the only thing we couldn't edit in Command Center was data in the records thereceluse Control Center is generally easy to navigate, with the profusion of options being the big-

Tightly integrated into Control Center is a set of what IBM calls SmartGuides little dislor boses that walk the administrator through the process of completing

A STATE OF THE PARTY NAMED IN

nd Center was designed to make it easier to execute a particular task, such as defining the

field in a new database The only significant negative we identified in Control Center was its annoying tendency to simply go away at various times. That seemed to be a surprisingly large known bug even for beta code. No nattern for the disappearances emerged

in our testing

Command Center Command Center is IBM's equivalent to the windowed Interactive SQL utilities supplied with other Windows-based SQL programs. It allows a user to enter stan dard SOL or DBa syntax for immediate execution. It also has features that save scripts to text files or Script Center. Unfortunately, we couldn't persuade it to save any of our scripts in either form. also a fairly large bug.

On a less severe note, we were some what annoyed that the editing screen didn't let us highlight text and remove it by pressing the delete key (though backspace did work). A few similar keystroke inconsistencies need to be examined and corrected before IRM releases this DRs package

Script Center Script Center is a repository for saving

and organizing SQL and DB2 scripts to be run through Command Center. As indicated above, however, we didn't succeed at savine any of the scripts we entered to Command Center, so we can't say much more than that it sour like a good idea, and the screen looked

Alert Center Working in conjunction with Con-Center, Alert Center lets the administrator trigger specific actions when the sys-

reaches key thresholds. For example, Alert Center might be used to signal an alert when a data base reaches a certain size or when the transaction frequency for a particular table reaches a certain leval At that point the curtary will record relevant information and alert the ad

> **Data Type Extenders** IBM has used DBa's user defined function and data

type capabilities to add significant functionality to DBa in the form of two sets of Data Type Extenders. User-defined functions let

the database programmer add functions. which an application programmer can call by adding parameters to requests in standard SQL syntax. A user or programmer can therefore request one of the Extender functions with easily understood SOI commande

Text Extender Test has, of course, always been a data type available in databases. What Text der brings to DBa is the ability to deal intelligently with text without ex-tensive programming. It adds the native ability to perform complex searches upon the contents of text fields. The extendgoes beyond simple starches, such locating text that contains a particular word or obrase. It can handle s es such as weighing the strength of content matches or proximity searching — finding words within a certain "distance" of one another. Its advanced capa bilities include grammatical searches, such as finding words that have common

All these capabilities are available with dictionaries and grammatical information for several languages, including Engish, German, French and Spanish. Our tests with English and German searches, using the supplied sample database, pro-duced satisfactory results.

In contrast to Text Extender, IAV Extender does in some sense add capabilities for new data types to DBa. Databases have for some time been able to handle such things as images by storing them as bi-nary large objects (Blobs). It was up to the database programmer, however, to create appropriate fields for descriptive information about the type and content Solid but rough, page 78

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SNEAKPEEK

Warehousing takes off

By James Connolly

emputerworld asked three industry experts about their expectations for the database management system market in the coming year and for some advice to buyers. The bottom line is that data warehousing, data marts and World Wide Web-enabled databases will stay hot. And for all the talk about universal servers, most user organizations are likely to walk, not run, when it

comes to melding complex data types with their relational DBMS em All the major RDBMS vendors are making ma

moves this year, whether it is replacing their core DBMS product or extending the capabilities and platform suppoet for high-end parallelized versions and universal servers - the hybrid relational/object databases available on a limited scale from IBM, Oracle Corp. and Informix Software, Inc.

st of the real progress is being made in scalability and Internet connectivity, says Richard Finkelstein, president of Performance Computing, Inc., a Chicago consultancy "IBM and Oracle seem to have the best scalability right now. Informix was doing very well, but they sort of lost themselves in the universal server ef-

fort, be says. Data wareho ing, especially the single-subject warehouses commonly known as data marts, will draw the most attention in the near future, according to another expert. "Two thines are attractine attention these days. One is data warehousing, and the second is the object stuff." says Morgan Gerhart, senior research analyst st Meta Group, Inc. in Stamford, Conn. "Of the two, we feel that data warehousing functionality is by far in the est demand among users. Everyone out there is spending a lot of time and money on building up the informational side of their infrastructure, whereas the object stuff continues to be a niche, to say the least." Obect technology will creep into general purpose DBMS products, he says, so it will be in place when main-

stream users need it several years from now Despite all the Web connectivity announces from DBMS vendors. Gerhart says he doesn't see major differences between the database on a Web server and

traditional database applications. "From the database's standpoint, being a Web server is not really that different from having someone hammering away with a Visual Basic application," he says. Gerhart says Meta also sees the emergence of more packaged data warehousing applications aimed at hori-

zontal services such as sales analysis. Don't expect each vendor to approach data warehous ing the same way, warms Carl Olofson, a research director at International Data Corp., a Framingham. Mass: market research house. "The emphasis tends to be different among the three vendors. Informix on the power of the engine. You see more of an emphasis on data warehouse building and management tools from a com-

pany like Oracle. And Sybase has its Sybase IQ solotion," be says Olofson says he expects Sybase. Inc. to make a bia middleware push with its new Jaguar CTS transaction server for Internet-based online transaction processing applications. Of the vendors that offer transaction serv

ers for intranets. Sybase has an advantage in openness because it supports Java and works well with non-Subsecutation on delain

The move to data warehousing begs for perform improvements, and DBMS vendors will continue to add support for larger parallel processing and symmetrical multiprocessing systems. Also, dealing with the high I/O demands of a data warehouse is at the heart of better

mce. Some vendors are trying to speed up the I/O process, but Gerhart says Meta recommends the approach of those vendors that are working to reduce the mumber of HOs

Some performance gains could come as vendors go to a three-tier architecture, using features such as a tran action server to off-load work from the main database.

Gerhart save Olofson says he expects the greatest performance gains to come in the decision-support or data warehous sector, and performance improvements in transaction processing should be more incremental

"Performance will continue to scale. It's imperative for DBMS vendoes to continue to improve performance. because the number of users is going to grow tremendously." Finkelstein says.

Watch for Microsoft Corp. to change pricing models with the release of SQL Server 7.0, tentatively scheduled for later this year. While other vendors justify the differce in cost between their workgroup and enterprise DBMS products by adding functionality to the enterprise version. Microsoft tends to offer more functional roup-priented SOL Server. That should drive other DBMS vendors to migrate functionality found in enterprise versions to workgroup-priced products to compete with Microsoft, Gerhart save.

Funkelstein says Microsoft prices are relatively low already, and Sybase and Informix, having lost market share, will have to be more appressive with pricing. But he says he expects Dracle and IBM to be able to charge more because they can deliver mo

Users may also see a new pricing model replace the er-user model. Finkelstein says, "DBMSs will have to be priced probably by the power of the platform, be-cause with the Internet/intranet model, you no longer have connections like you do in client/server." Buyers should lock their vendors in to a long-term, platformbased price today, knowing that their user base will grow a lot in the next five years, Finkelstein says.

Connally is Computerworld's technology evaluations

Solid but rough

of data in those Blobs. And the content of those descriptive fields was only as good

IAV Extender addresses some of the issues of content management for these data types. When a data file is submitted to be stored in an image, audio or video field, the extender examines the contents of the file to determine its data type. The system initially tests to see whether the content matches whatever is implied by the file name extension, i.e. that a IPG file contains a IPEG image. It also loss some basic information such as image

There are search canabilities in IAV Extender, primarily for image data types and, to a lesser extent, audio types. For example, a query may request that graphics interchange format images that have an average color of green. Or a search might be conducted for all Musical In-

strument Digital Interface files greater than a certain size that contain an oboe. as the information supplied by the sys-On a more advanced level, a template image might be supplied to the system to search for images with similar color values. Fither of these searches is easy to perform, requiring only the addition of some simple parameters to otherwise standard SQL calls. There's no need to perform extensive advanced preparation of data, as typical search criteria are

gathered by IAV Extender when images But compared with Text Extender, IAV Extender seems to be more of a work in progress. It isn't yet equipped with some of the truly advanced capabilities, such as ape analysis, that it must have to satisfy the needs of sophisticated graphics users, though the basic searches certainly neem to work as advertised.

One disadvantage of Text Extender and



Control Conter was easy to navigete except

IAV Extender is that they require that their particular User Defined Function and sounds are originally saved in the and User Defined Data Types be added to each database that they will be used in. That raises the specter of missed up grades in the future. In an environment where many databases use one or more of the extenders, simply tracking which database has had which extender in stalled may become a monumental task If IBM thinks that these extenders will be more widely used in the future, it may need to consider a different approach.

IBM responds IBM issued the following reuse through its public relations firm:

*DBa Universal Database is in bets test today, targeted for release in September. The beta code is being used and evaluat-ed worldwide by existing and potential customers, resellers and analysts. The feedback on the power, feature set and usability of the product has been

overwhelmingly positive. "During the upco months, IBM will continue to test and improve software to ensure that when d livered, the final product embodies the reliability, performance and robus that are synonymous with IBM and DR2. And because we haven't completed our final test phase, we have been able to in-corporate good suggestions by reviewers. This is the value of the beta." D

Hayes is systems control manager at Client/ rver Loks, Inc. in Atlanta, a primary test lab partner of Computerworld.

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CLEAR SION

It was an ambitious project schedule by any standard. Developers got system specifications at 17:45 a.m. and had to have working prototypes by 2 o'clock that afternoon.

The system, developed as paper mock-ups by each of three competing teams, processed orders at a fast-food outlet. Pretend users pushed paper to place orders, while team members provided paper-

based "computer" responses.

The first team able to accomplish an assigned task — such as ordering as much food as possible for \$3.84 — won the contest.

"The winning team had a user interface with enough instructions that

the user coad a cally operate is without being coached by the issum. By Gary H. Anthe S says Kurt Morehouse, a senior consultant in research computing at Glazo

It was just a training enercies, but that's how they develop real applications at this Research Tisingle Park, H.C., pharmaceutical computers Morerbousce's group has abandoned software unability senting, and it desent much like software protocyping, either Web the group constantently defenses software that is easy to use — often with no documentation — and applications that fully mere users' needs. Even the users say as.

Software developes at the company's Research and Development Information Resources unit take "requirements definitions" to

a realm unleared of in most organizations.

They become user "apprentices," produce scores of models and push paper — lots of it.

Clear vision, page 82

» Front, left to right: Glaxo Wellcome's Kurt Morehouse, Ingrid K. Towey and Holly Desportes. Back: Roger Corneje.

CONTINUED FROM PAGE SI

The company says this front loading of labor aves on total life-cycle costs through less coding, testing, training, documentation and

The process is involved, but team leader lorehouse stresses that "usability needs to be built in, not added on." That may seem obvious, but few developers do it, he says. Indeed. Glaso Wellcome used to focus on how to make an application usable after the software was developed, via usability testing, modifications to user interfaces, documentation and training But by then, it was too late to really optum

"Usability must be systemic - top to bottom, through and through," Morehouse says. 'It is not just in screen ergonomics; it's in the structure of the system as well as on the curface '

The group employs a technique called con-textual design to develop software for Glass Wellcome's research scientists. The apwas pioneered at Digital Equipment Corp. in Maynard, Mass., and later refined and commercialized by InContest Enterprises, Inc. in Harwand Mare

In contextual design, developers come to in mately understand users' needs in the context of their actual daily work routines.

ace - in this case, the research laborate The user is asked to accomplish a task while one developer plays computer and another records the results. "The scientist might much a button, then we'll pull up the next piece of interface and lay it on the table." Morehouse says. "This gives the customer a way to roleplay through the system." When something doesn't work, the user is

asked to become a co-designer. "We offer the users paper, pencil and tape, and we let them design an interface that they think will work "Morrhouse says

The development team repeats the process until the paper prototypes become too detailed to be practical. Only then, when usability is already largely proven, does the coding of software prototypes begin.

Paper prototyping is less likely than software prototyping to result in developers inng too much ego in their designs, says In grid K. Towey, a senior systems analyst. "If you're working with paper, it's very easy to change and very easy to throw away," she says. "And it puts the user on the same footing

"Normally, you write a lot of code and you show it to users and they say, 'Well, we know that's what we asked for, but it's not what we wanted," Spool says. "Now, you go through that cycle before you've written any code."

Spool says a key advantage of pag ototypes is that they can be created by nonprogrammers with little training. "Anyone on the team can produce a working version of the application; you can be a business analyst, a trainer or a technical writer

And Holly Desportes, a senior systems analyst at Glaso Wellcome, says, "Once you get it right on paper, we can get it into working code very

"This takes a lot of decisions out of the back room," Morehouse adds. "Specifications used to be so peneral that the programmers made a lot of decisions on their

But users sometimes balk at the paper-pushing exercise. "It's definitely frustrating at first," Nguyen says. "You see all the paper models, and they look silly. You want the product." But he concedes that the code caree quickby thereafter, and it was delivered with full functionality and few bugs.

When Glaso Wellcome adopted these practices two years ago, it gave up classic usability testing, in which users of completed software are videotaned and the tapes analyzed for ways to improve user interfaces. "It didn't give us as much insight as we wanted," Morehouse says. "The problem was there were no good metrics for how to interpret it."

The applications that Morehouse's group develops now are so user-friendly that user documentation and training have been reduced by about 80%, be estimate Indeed, some software is delivered with only a one-page installation guide and a small amount of online help We have turned documentation around

degrees," Morehouse says. "We used to say. 'Now that we have the system, what does it do? Now we start with the user's perspective, not the programmer's perspective."D

Anthes is Computerworld's sonior editor, special reports. His Internet address is gary_anthes@css.com.

eally mirrors our work practices

For each major function that will be supported by the software, users are interviewed by multiple development staff members.

Two-hour interviews take place while users go about their jobs and developers observe and take notes. The key is seeing what users do, not just hearing what they say they do.

That eliminates the common --- but flawed --- practice of having subject-matter experts relay requirem to the development team secondhand, savs lared Spool, a founding principal at consulting firm User Interface Engineering, Inc. in Andover, Mass., which helped Gizzo Wellcome develop its design methodology. "As Yogi Berra once said, You can observe a lot just by watching," be says.

ALL THE RIGHT STEPS Morehouse says, "If I ask a mechanic over dinner how

he changes brakes, be may give me four steps. But if I were to go and watch him. I must see that there are so to 40 steps. And some of the really key tricks he has developed to make the job easy, be doesn't talk about at Despite the benefits, the process can be difficult for

the users, says Quan Nguyen, a Glaso Wellcome researcher in human genetics. Nguyen uses a software aid to genetic sequencing that was developed through conual design Developers "followed us around in the laboratory for

several weeks," he says. "They picked up little bits of science, observed, asked a million question ens, took notes and got in the way."

But the payoff was a system that met users' complex needs and presented to them "almost seamless interfaces." Nguyen says. "It is very easy to use because it

And the in-your-face interviews had a side benefit, says Raymond Grimaila, a bio-informatics specialist and another user of the software. "Their questions helped us improve our workflow." he says. "For example, they'd

say. Wouldn't it be better to shift this piece of equipment over to that bench to out down on traffic time? The working interviews typically result in 16 to 20 two-hour accounts of the activities to be supported by the system. Then the development team - usually about five people - begins to interpret and integrate the

In group sessions, each interviewer recounts and acts out his version of the observed workflow. That information becomes the basis for a consolidated view of the

user's work. 'Through iterations of role-playing, we reconcile different views," Morehouse says. Those views take the form of five models. One model deals with oceanizational culture, standards, policies and the like, another explains workflow in the physical world, including buildings, rooms and hardware locaons, others document workflows by person and time.

The key goal of the integration and modeling phases "to distill the signal from the noise," Morehouse says. Then more brainstorming sessions occur. Developers take the models of how users currently work and extend them to include new and improved work practices. From that emerges a merr environment design, or seetem "floor plan," that shows all the parts of the system and how they relate.

Then the paper pushing begins. System mock-ups, in the form of paper squares and Post-It notes, are affixed to a board and connected by arrows drawn by colored

The paper prototyping takes place in the user's wor

ALR is only





PAIL 14, 1997 VOLUME 19, ISSUE 15 Founded in 1978

ALR Revolution 6x6 packs a punch

HE ALR REVOLUTION 6x6 is a

pretty amazing machine. Advanced Logic Research has nys had good server designs, but in the past they re about even with Compaq's or wien-Packard's efforts. The ion 6x6 pets the company shead by offering more com-pelling features and approachitty

while remaining in the same price range. This is the must-buy for

than 1,024 of these things. Because the gots of the

Revolution 6x6 are based on two processor cards, each having as many as three processors, I looked at the server configured with three, four, and six processors. This let me look at a fully coeffig. ured one-card system, a four-CPU system that's comparable to com-

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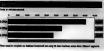
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On the whole, this is the best server I've seen for loss than \$50,000. If you want a super-high-end, multiprocessing, fault-tolerant, room-size server, look to Tricord or NetFrame. Otherwise, formance jumped anot or 34 percent. Althoug that falls short of ideal scalability, it's still as buy this server - now. extra 34 percent at prac-ticelly no cost.

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ALR's Revolution 6x6 scales the heights



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As with its predecessor, the Revolution Quad 6, Revolution 6x6's most prominent feature is ALR's truch-sensitive LCD, dubbed InforManager. forManager gives a visual and slible alert for out-of-bounds inditions in the power supplies, ns, and temperatures.

Of course, an one wants to ang out in the server closet ng an LCD, so

ote-management peace can die as many a 1,024 servers-retation ALR would happily

ALR took with the machine. The Revolution fast is based on the same 450GX chip set (previously known as Orion) as com-petitors' four-CPU offerings. The reason everyone else is stapping. In four-CPU systems is the clop set is 2-bit CPU addressing scheme, which allows for four-CPU IDs. ALR has implemented two sets o three CPUs; the resisting fourth CPU in each set is actually a stand-as for the other metic group. The Pertium Pro's round-cobin multituding approach is pre-served, and the four-CPU limit is

was configured with a whopping IGB of RAM and 10 2GB tiles SCSI drives in a RAID army



1 THE TOP

Gaining in demand and estige, a tempology-focused MBA can be the ticket to a key leadership real / BY ALAN R. EARLS

TECHNO-MBAs

ric Cunningham doesn't have to be sold on the value of his technologyfocused MBA.

"I received three employment offers before graduation, which was typical of my peers," he says.

A 1995 graduate of the techno-MBA program at the University of Texas at Austin, Cunningham says he was surprised by the most immediate results of the program: the tremendous interest shown in him and other future grad-



uates by employers during the recruitment period at the university.

But the real value of the university's information systems-focused business program became clear to Cunningham when he signed on as a business analyst at American Management Systems, Inc. (AMS) in Birmingham; and Ala. Cunningham is now on the front lines, solving client problems daily, Originally recruited by

AMS to provide planning Top 25 Techno-MBAs, page 86



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and analysis on a large object-offensed development project. Cunningham says he is especially pleased with the analytical emphasis provided by the University of Texas. He says it has made him a good fit at AMS.

"I felt able to contribute right away," Cunningham says.

More recently, with support from his manager, Cunningham has moved toward a project leadership role at AMS.

This type of work requires heavy emphasis on real-world skills. Most of the top techno-MBA programs ranked in Computerworld's Top as Techno-MBA Survey demand that students roll up their sleeves and tackie actual IS tasks and problems before they enter the workforce. The real attraction of the degree for employers is how those pragmatic skills are wedded through internships and classroom exercises to an advanced understanding of the business environment.

Most schools provide techno-MBA graduates with the full flavor of an MBA program. Some, such as Boston University, even offer the opportunity to pursue a doctorate in business administration for IS as well. And the IS component isn't sim-

ply an add-on. The leaders among techno-MBA programs have gone a long way toward successfully integrating IS and business thinking. Top-tier schools report that their 15 faculty members aren't only teaching, but also providing leading-edge IS research that gets published in respected technical and academic journals.

Students tend to be a cut above, with Graduate Management Admission Test scores in the mid-600s among the top 10 schools. Many students also have some previous work experience, often in IS functions. And when they graduate, they get snapped up fast. The top so schools reported that virtually all students had accepted an employ-ment offer or were employed full-time within six months of their string eraduation.

THE TOP

TECHNO-MBAS

"My degree is often misunderstood by people. Most think I'm qualified to talk about IT, but not about processes. It usually takes just a little bit of time for them to see my work and to understand what skill set I bring to bear on a project."

- Blaise A. D'Ambrosio.

1995 Boston University graduate

the desired effects.

'There is a real attraction to the technical MBA programs for a company like AMS," says Paul Renard, vice president of the telecommunications industry group at the Fairfax, Va.-based company. Renard has recruited many techno-MBA graduates. We like them, we like to hire them, and we find they provide a more focused and more leveragable set of skills than a standard MBA," he says.

RING A CHANGE MASTER

So what's the bottom-line value here? Renard estimates that graduates of top-tier techno-MBA programs can command starting salaries of \$80,000 to \$120,000 per year. What's more, it's no longer a sheepskin reserved just for IS

ofessionals or others following a strictly technical career path. In a time of rapid technical change across all industries, it's a degree that helps those who hold it become "change masters." In her 1988 book: The Change Masters, Harvard Business School Dean Rosabeth Moss focused on the entrepreneurs and innovators who were beginning to reshape the global economy. 1S has now become the main enabler for change and the skill to master for those would-be change masters.

There are few industries that have not embraced linformation technology) as a means of increased productivity," says Blaise A. D'Ambrosio, a 1995 graduate of Boston University's techno-MBA program. He is now an internal consultant at the Singapore office of SBC Warburg, Inc., a division of Swiss Bank Corp. "Whether you are re-engineering, doing quality control, globalizing your opera-tions, downsizing or rightsizing, you are probably using IT as the enzyme to produce

Projects to which D'Ambrosio has been assigned include analysis and recommen-dation of a global trading system for precious metals, a feasibility study on a joint ven-ture operational subsidiary with another investment bank, analysis and recommenda-

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tion of technology solutions for process mapping and simula tion, workflow and employee task education

Still, D'Ambrosio says, "My degree is often misunderstood by people. Most think I'm qualified to talk about IT, but not about processes. It usually takes just a little bit of time for them to see my work and to understand what skill set I bring to bear on a project

SBC Warburg has made sure that D'Ambrosio doesn't get stuck doing fix-st yobs in IS. Shortly after he came aboard, the firm sent him to its eight-week training program to help him master the finer points of trading, derivatives and risk control.

ALL CHARGED UP

Even at a5th-ranked Bostoo University, the story is much the same: Employers line up to get their pick of the new crop. The experiences of Jeffrey Chang, who graduated from the Bostoo University program in 1995, tell the story of the techno-MBA as a credential that is increasingly valued in the mainstream.

With an undergraduate degree in accounting. Chang says the techno-MBA "was a decisive credential" in moving his career forward. After being courted by several firms, Chang says he selected a Big Six accounting firm because it provided him the op-

portunity to tackle the most diverse range of projects. Chang says Boston University's program prepared him for that diversity. "So many business problems today are complex and convoluted. Having the ability and awareness to attack

them from a multifaceted perspective is very helpful," he says.

Chang's employer, which he asked not be identified, provided a highly structured. recruitment and orientation program that included an extensive introduction to its

methodology. That introduction, combined with subsequent in-house training, has totaled more than five months out of the 18 months Chang has worked at the commany. Obviously, a payback is expected from this much attention: Chang is expected to be-Earls is a freelance writer in Franklin, Mass

THE TOP TECHNO-

MBAS

technical MBA programs for a compamy like AMS. We like them, we like to hire them, and we find they provide a more focused and more leveragable set of skills than a standard MBA."

- Paul Renard, vice president of the telecommunications industry group at AMS

For most com

come a more capable business problem solves. Chang says h

employer is so focused on maintaining and enhancing his skill set that he is "catching flak for not taking enough training."

nus neckare

Ray Atkin, a 1994 techno-MBA graduate from Boston Unix ty who now works at Kurt Salmon Associates in Atlanta, says he sees salaries for techno-MBA graduates continuing to rise, "I think a well-qualified graduate (of Boston University) could expect offers in the range of \$65,000 to \$90,000, plus a good bo-

Although the techno-MBA once may have been seen as an also-ran among MBAs, it's now starting to be treated as something a bit above an ordinary MBA. There is a real attraction to the

"My perception is that techno-MBAs can get a 20% or 30% salary premium over traditional MBAs," says James Lancaster, a consultant at Deloitte & Touche who graduated from the University of Texas program in 1992. At the University of Texas, that translates into more companies recruiting from the ranks of techno-MBA graduates, and more interviews and offers per

student than for traditional MBA graduates, he care Lancaster says that once techno-MBA graduates join an org nization such as Deloite & Touche, they often gravitate towar re-engineering projects and other areas where management theory and IT practice intersect. "In my role, I have worked on

both technical and general management projects," he says. mies, the technical aspects of business are becoming more impor tant, making a techno-MBA an increasingly mainstream asset

"Almost every project we do has a mix of practitioners." Lancaster says. "but it is growing fastest on the technology side."

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University of Wisconsin at Medison (608) 265-2034	www.wisc.edu/bscheel risziny@bus.wisc.edu	\$5,278° \$14,204°	18	8:1	80%	100%	70%	100%	\$44,291	
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Arizone State University Tempe (602) 965-5516	www.cob.esu.edu/mba lerry.peniny@asu.edu	\$2,010° \$8,378°	40	12:1	36%	33%	56%	100%	\$53,244	
Beston University (617) 353-3366	management.hu.edu/ program/ma-mis/hedus.htmi interchi@u.edu	\$31,139*	28	41	~	100%	85%	99%	\$51,797	

and analysis on a large object-oriented development project. Cunningham says he is especially pleased with the analytical emphasis provided by the University of Texas. He says it has made him a good fit at AMS

"I felt able to cootnbute right away," Cunningham says More recently, with support from his manager, Cunningham

has moved toward a project leadership role at AMS. This type of work requires heavy emphasis on real-world skills. Most of the top techno-MBA programs ranked in Compa terworld's Top as Techno-MBA Survey demand that students roll up their sleeves and tackle actual IS tasks and problems before they enter the workforce. The real attraction of the degree for employers is how those pragmatic skills are wedded through internships and classroom exercises to an advanced

understanding of the business environment. Most schools provide techno-MBA graduates with the full flavor of an MBA program. Some, such as Boston University. even offer the opportunity to pursue a doctorate in business administration for IS as well. And the IS component isn't sum-

ply an add-on. The leaders among techno-MBA programs have gone a long way toward successfully integrating IS and business thinking. Top-tier schools report that their IS faculty members aren't only teaching, but also providing leading-edge IS research that gets

published in respected technical and academic journals. Students tend to be a cut above, with Graduate Management Admission Test scores in the mid-6oos among the top 10 schools. Many students also have some previous work experience, often in 15 functions. And when they graduate, they get snapped up fast. The top 10 schools reported that virtually all students had accepted an employment offer or were employed full-time within six months of their spring graduation.

THE TOP

TECHNO-MBAs

"Ny degree is often misunderstood by people. Most think I'm qualified to talk about IT, but not about processes. It usually takes just a little bit of time for them to see my work and to understand what skill set I bring to

bear on a project." - Blaise A. D'Ambrosio,

1995 Boston University graduate the decreed effects

'There is a real attraction to the technical MBA programs for a company like AMS," says Paul Renard, vice president of the telecommunications industry group at the Fairfax, Va.-based company Renard has recruited many techno-MBA graduates. We like them, we like to hire them, and we find they provide a more focused and more leveragable set of skills than a standard MBA," he says.

BECOMING A CHANGE MASTER

So what's the bottom-line value here? Renard estimates that graduates of top-ner techno-MBA programs can command starting salarses of \$80,000 to \$120,000 per year.

What's more, it's no longer a sheepskin reserved just for IS professionals or others following a strictly technical career path. In a time of rapid technical change across all industries, it's a degree that helps those who hold it become "change masters." In her 1988 book, The Change Masters, Harvard Business School Dean Rosabeth Moss focused on the entrepreneurs and innovators who were beginning to reshape the global econ IS has now become the main enabler for change and the skill to

master for those would-be change masters. There are few industries that have not embraced finformation technology) as a means of increased productivity," says Blasse A. D'Ambrosio, a 1995 graduate of Boston University's techno-MBA program. He is now an internal consultant at the Singapore office of SBC Warburg, Inc., a division of Swiss Bank Corp. "Whether you are re-engineering, doing quality control, globalizing your opera-

tions, downsizing or rights izing, you are probably using IT as the enzyme to produce Projects to which D'Ambrosio has been assigned include analysis and recommendation of a global trading system for precious metals, a feasibility study on a joint venture operational subsidiary with another investment bank, analysis and recontimenda-

4	The top 15 schools	Brit page (5 mail address	Terbin	CANDAS IN class of 14	fatin of students to locally	% of classes under 25 stadests	% of working cholests	% of courses with field work	No of grade. offered joks	Starting salary offered
	MIT Cambridge, Mass. (617) 253-5049	N/A	\$23,900	20	N/A	M/A	N/A	N/A	95%	N/A
	University of Texas at Austin (512) 471-5240	www.bus.utexas.edu ejordan@mail.utexas.edu	\$1,920° \$8,680°	60	27:1	63%	99%	63%	100%	\$61,000
	Carnegie Melion University Pittsburgh (412) 268-8933	www.gsia.cmu.edu CSwaney@andrew.cmu.edu	\$22,100	28	6:1	0%	100%	100%	100%	\$68,224
	University of Minnesota Minneapolis (612) 624-4519	www.csom.umn.edu slamkin@csom.umn.edu	\$9,341° \$13,562°	45	40:1	11%	100%	25%	100%	\$51,569
	University of Michigan Ann Arbor (313) 763-9779	www.bus.umich.edu/	\$16,800° \$23,000°	30	H/A	20%	30%	60%	100%	· N/A
	University of Illinois at Urbana-Champaign (217) 244-8019	mba.cha.oioc.edu pmaqeti@commerce.cha.uiuc.edu	\$10,122° \$16,476°	14	8:1	75%	100%	100%	100%	\$65,000
	University of Arizona Tecson (\$20) 621-2748	OINGRY@BPA.ARIZONA.EOU	\$2,008° \$6,296°	24	10:1	47%	80%	60%	30%	\$53,400
	University of Pennsylvania Philadelphia (215) 898-8036	www.wharton.upenn.edu hardwick@wharton.upenn.edu	\$23,208	40	8:1	50%	100%	15%	100%	\$50,000 - \$156,000
	University of Colifornia at Berkeley (\$10) 642-1425	hass.berkeley.edu hasler@hass.berkeley.edu	\$10,400° \$18,600°	20	20:1	75%	20%	0%	100%	\$63,000
	New York University (212) 998-0844	www.stern.mpu.edu muretsky#stern.mpu.edu	\$23,000	50	5:1	80%	15%	100%	100%	\$85,000
	Texas ASM University College Station (409) 845-4711	www.tems.edu/cbe ABCOTAMU.EDU	\$1,340° \$4,316°		4:1	36%	82%	67%	100%	\$43,506
	Purdue University West Lafeyette, Ind. (317) 494-4366	www.mgmt.purdue.edu weidend/imgmt.purdue.edu	\$7,000° \$14,800°	14	3:1	40%	80%	25%	100%	\$65,400
	Indiana University Bioomington (812) 855-8489	www.bus.indiana.edu datten@indiana.edu	\$8,000° \$15,613°	20	12.1	50%	100%	100%	100%	\$60,000
	University of Rechester Rechester, N.Y. (716) 275-3316	www.ssh.rochester.edu Pinsseriimaii.ssh.rochester.edu	\$21,240	35	10:1	20%	40%	15%	100%	\$58,000

tion of technology solutions for process mapping and simulation, workflow and employee task education

Still. D'Ambrosso says. "My degree is often mesunderstood by people. Most think I'm qualified to talk about IT, but not about processes. It usually takes past a little bit of time for them to see my work and to understand what skill set I bring to bear

SBC Warburg has made sure that D'Ambrosso doesn't get stuck doing fix it jobs in IS. Shortly after he came aboard, the firm sent him to its eight-week training program to help him master the finer points of trading, derivatives and risk control.

ALL CHARGEO UP

Even at 25th-ranked Boston University, the story is much the same: Employers line up to get their pick of the new crop. The experiences of Jeffrey Chang, who graduated from the Boston University program in 1995, tell the story of the techno-MBA as a credential that is increasingly valued in the mainstream. With an undergraduate degree in accounting. Chang says the techno-MBA "was a decisive credential" in moving his career

forward. After being courted by several firms, Chang says he selected a Big Six accounting firm because it provided him the opportunity to tackle the most diverse range of projects Chang says Boston University's program prepared him for

that diversity. "So many business problems today are complex and convoluted. Having the ability and awareness to attack them from a multifaceted perspective is very helpful," he says.

Chang's employer, which he asked not be identified, provided a highly structured recruitment and orientation program that included an extensive introduction to its methodology. That introduction, combined with subsequent in-house training, has totaled more than five months out of the 18 months Chang has worked at the company Obviously, a payback is expected from this much attention: Chang is expected to be-

THE TOP

TECHNO-MBAS

There is a real attraction to the technical MBA programs for a company like AMS. We like them, we like to hire them, and we find they provide a more focused and more leveragable set of skills than a standard MBA."

- Paul Renard, vice president of the telecommunications industry

group at AMS

come a more capable business problem solver. Chang says his employer is so focused on maintaining and enhancing his skill set that he is "catching flak for not taking enough training."

A CUIT ABOVE

Ray Atkin; a 1994 techno-MBA graduate from Boston Univer ty who now works at Kurt Salmon Associates in Atlanta, says he sees salaries for techno-MBA graduates continuing to rise "I think a well-qualified graduate [of Boston University] could expect offers in the range of \$65,000 to \$00,000, plus a good bo-

nus package Although the techno-MBA once may have been seen as an also-ean among MBAs, it's now starting to be treated as some-

thing a bit above an ordinary MBA. 'My perception is that techno-MBAs can get a 20% or 20% salary premium over traditional MBAs," says James Lancaster, a consultant at Deloine & Touche who graduated from the University of Texas program in 1992. At the University of Texas. that translates into more companies recruiting from the ranks of techno-MBA graduates, and more interviews and offers per student than for traditional MBA graduates, he says.

Lancaster says that once techno-MBA graduates join an organization such as Delotte & Touche, they often gravitate toward re-engineering projects and other areas where management theory and IT practice intersect, "In my role, I have worked on both technical and general management projects." he says

For most companies, the technical aspects of business are becoming more important, making a techno-MBA an increasingly mainstream asset "Almost every project we do has a mix of practitioners." Lancaster says, "but it is

growing fastest on the technology side." Earls is a freelance writer in Franklin Mais.

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Ohio Stata University Columbus (614) 292-2666	www.cob.obio-state.edu alutto.19osu.edu	\$5,057°. \$12,5824	10	3:1	50%	40%	100%	90%	\$57,500
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WILLING

REGIONAL SCOPE
Pittsburgh

A successful Pittsburgh program

may become a national model for

placing IS pros with disabilities

By Jill

Vitiello

T STARTED O IT as just another routine workday, but Marianne Duffy will never forget Nov. 2, 1992. It's the day a drunk driver collided headon into her car and changed her life.

Duffy was on her way to the Cracker Barrel restaurant in Jackson, Miss., where she worked as a waitress. The injuties she received in the crash left the wife and mother of three permanently dis-

But when she returned to her hometown of Fithbought, the buttiess and education community gave Dulfy a new start by hunching her career in the cupputer industry. Dulfy qualified for retraining at The Institute of Advanced Technology at the Community College of Allegheny County in Phtsburgh. Supported by local companies, the institute

Allegheny County in Pittsburgh. Supported by local companies, the institute trains people with disabilities to be desperately needed computer programmers. Duffy earned a certificate of computer

programming in 1996, specializing in Gobol She accepted a job at Bender Consulting Services (BCS), which hires information systems professionals with disabilities. Duffy began contracting at Highmark Blue Cross/Blue Shield and continues there today.

"It is hard to accept that I can't do the things I used to be able to do," Duffy says. "But now that I'm working again, I feel productive. I love what I do."

Pittsburgh businesses face a desperate shape of 15 talent, but they're starting to recognize the contributions disabled 15 professionals can make and are working together to provide these workers with equal job opportunities.

Pittsburgh's program may become a national model because of a chance meeting in Washington last summer. Joyce Bender, an executive recruiter and president of Bender and Associates and its subsidiary company, BCS, spoke at a conference about how the IS community in Pittsburgh was helping professionals with disabilities. In the audience was Torn Coelho, the chairman of the

was Tony Coelho, the chairman of the President's Committee on Employment of People with Disabilities and a former Califorma congressman who also helped craft and pass the Americans with Disabilities Act. Coelho introduced himself to Bender and soon after appointed her to cochaic his committee.

"I wanted Joyce because she's gone out into the workplace and made a difference," Coelho says. "She's a wonderful, believing person with the rare ability to

GETTING INVOLVED

The President's Committee on Employment of People with Dissbil lites will hold its 50th annual confeence in Washington from June 4-6.

For the first time, the conference will include an employment fair, scheduled for June 6. Interested employers should contact Fox King & Associates at (8):0) 6:64-700.

job seekers can attend the employment fair fer fea. Check out the committer's World Wide Web size for morinformation on job opportunities and possible candidates at wew.pcepd. gov/contents.htm. or E-mail the committee at info@pcped.gov. To read more about joyce Bender and Bender and Associates, visit www.computerworld more frameworld. convince businesses about the benefits of hiring people with disabilities." Highmark Blue Cross/Blue Shield was

Highmark Blue Cross/Blue Shield was one of the first companies to hire BCS consultants. Life many Pritsburgh IS shops, Highmark needs Cobol and PopoleSoft programmers.

Two BCS consultants work at Highmark. Duffy is one, and the other is Ricco Brusco, a PeopleSoft programmer who has cerebral palsy.

"As an IS consultant, my disability doesn't factor into my work at all." Brusco says. "My PC is a tool for me to do my job, just like my wheelchair and crutches are tools to help me get around."

In the piping hot 15 we manter, in printinging, local and Prophesion proressionary revised in the procession of the professionals with networking expertise, internet and intranet capabilities and dientplerers backgrounds. While Pittsburgh has a rich salent pool of 15 professionals, there simply sent renogh to paaround. Recruiters are looking for people willing to relocate there, and some are tracking down former Pittsburgh revicents and entiting them to return to

their hometown.

But employers are also looking to an often overlooked population — IS professionals with disabilities.

"We were looking to being in people with talents to contribute to our team," says Dom Morchowet, chief information officer at Highmark Blue Cross/Blue Shield. "The fact that these consultants have disabilities is not an issue. Employers who aren't histing people with disabilities are missing out on an important talent pool." If the proper way to the contribute of the proper of

Viticile is a freelance writer in East Brunswick, N.J.

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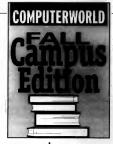
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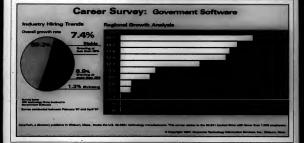
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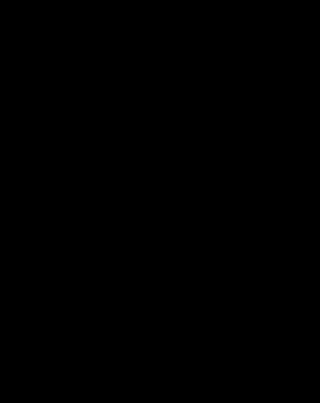
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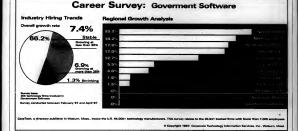
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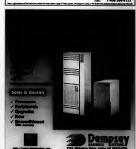
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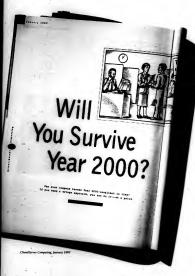
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Staffing shortage stalks nets

By Bob Wallace

AN ACUTE shortage of skilled onnel has IS scrambling for alternative measures to meet its

More than half the 185 respondents in a recent Technology Managers Forum survey

nanding higher wages,

which effectively wipe out much

of the cost savings to U.S. firms.

For example, India, a prime source of inexpensive informa-tion systems talent, is experience

ing its own skills crunch, which

Offshore talent dwindles

sponsored by Computernerid said they won't be able to support enterprise network com-puting with their current staff. "We had a hiring schedule for

the first quarter of this year and didn't make it," said an information systems manager at a large financial services firm who had a couple of major projects slip a quarter because of staff

To cope, IS and network ma agers are employing tactics such as standardizing on products continuous cross-training and smarter use of networking techpology. That's in addition to offering overtime pay and farming out work to consultants and

other temporary workers.
"Since IS management can't bank on finding what they need

in this tight market, they've got to find creative ways to make the most of the staff they have today," said Priscilla Tate, execu-tive director of the Technology Calif., said cross-training is a big Managers Forum Internation in New York, an association of more than 280 large users. and versatile, [and] cross-training enables, them to become



Interviews with more than a dozen user firms revealed that some large organizations have found ways to lessen the need for additional staff by change how they run their operations "We decided we wouldn't need to hire as many workers if we standardized on products. platforms and protocols," said ward Bianco, chief information officer at Lowell General

ficient in different areas," neenblatt said According to the study, the key to selecting good staff is to look for attitude and aptitude. And candidates should be inter

se Loans in Simi Valley.

Workers need to be flexible

viewed by a team of people, both nickl and nontect Big Six accounting firm Coopers & Lybrand is opting for earter use of networking tech pology to limit new hires.

We used to have a library in each of our 90 to 100 offices in the U.S., but we've put everyng online and now only have aditionall libraries in two offices," said Brian Brumit, a m tional coordinator at Coopers & Lybrand in Hartford, Conn. OTTOM-LINE BEX

Management at C.R. Bard, Inc. limits hiring to projects that will show clear bottom-line benefits.

"We resist having bodies for technology projects until we can show a positive influence on the company's bottom line, because we're in business to make mor ey," said Paul Masucuk, corpo rate director of data processi operations at C. R. Bard in Mu ray Hills, N.J. "There's a push and pull between technologie and management. Someti technologists just want to put in systems and networks and let technology cloud the issue of



is driving up labor prices. Competition from thousands of European companies looking for Indian programmers to work an Euro-currency conversion projects also is contributing to the problem. Internet and intranet projects also are taking their toll on avail-

able resources. Without question, the software demands upon my compamy are growing dramatically," said lim Thomas, a Dallas-based vice president at Tata Consultancy Services, India's largest promming firm.

OWNERS TO TURN Other potential sources of pro-

amming talent include freland, Israel and Russia, but their combined IS labor pool isn't nearly enough to meet current mand, let alone the as% an aval increase in demand in the U.S., said Howard Rubin, a consultant and chairman of the computer science department at Hunter College in New York.

Some observers predict that year 2000 and Euro-currency ets could fall behind in tht of the worldwide crunch. Capers Jones, an IS labor expert, said many European cur-rency projects — which should be completed in 1999 - could be delayed as far out as 2005.

"There's a very big shortage all over the world, including India," said Raj Vattikuti, presi dent of CBSL Inc. a Farmington Hills, Mich-based systems cerator that relies heavily on

Experts at Stanford University's Computer Industry Project peg the current worldwide market for software services at \$185 billion. India exports about \$700 million in services.

"That's a drop in the bucket," said Shirley Tessler, co-director of the Stanford research project. "There's only a finite number of people in India to do this work. and even if that ourdrupled in size, it would still not be large enough to serve the worldwide

market," she said. The upshot is higher prices.
"It's not like we're getting a discounted rate anymore," said Jim. Fox, IS director at Union Pacific Corp. in Omaha

"A few years back, they were uite a bit cheaper — about 311% cheaper - but that's not the case anymore," Fox said. D

Hospital in Lowell. Mass. Maralyn Rosenblatt, vice p ident of client services/desktop technologies at Countrywide **Contract salaries rising**

"It's almost obscene how much money people are being paid out there," said Brian Hoffman, an IS recruiter at Winter,

Wyman & Co. in Waltham, It is "not at all uncommon" for new graduates to earn \$45,000 to \$50,000 with a professional services firm, Hoffman said. That compares with a

maximum of about \$36,000 as company employee. The \$45 billion IS professional services market is projected to increase by 17% this year, driven primarily by greater demand and higher hourly rates.

Consultants' salaries will increase by an average of 8.5%, and hourly billing rates will climb from \$51 to \$53, according to a survey of 100 services firm conducted by Updata Capital, Inc. in Holmdel, N.J.
"We're definitely hiring more

insultants than internal peo ent is going," said the chief information officer at a \$1 billio oil distribution company, wh ed to remain unnamed. Experts in Oracle Corp. da base technology, Unix and Powersoft's PowerBuilder were ought in from outside, he

It is generally agreed that IS staffing firms have an eas cruiting top technical talent, which is a key advantage in the midst of the acute skills

One reason is salary. Many of these firms pay workers as much as a 30% salary premium over what they could earn as an 1S employee in a manufacturing

pharmaceutical company. Professional services fir also can place workers on a vari ety of projects, thus keep technology and on track in their nnical careers, said Paul ston, director of consulting ement services at Innal Data Corp. in Fra

ere's definitely a lot of on for the same rearces, but the IT services ms have a much better story to tell to the potential candidate



asan Scrupski, editor of "IT On the other hand, if an IS ssional goes to work as an employee in an IS department,

rre's always the chance they'll get outgourced." Scrum

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COMMENTARY

Is 'We're extensible' the all-purpose excuse? David Coursey

hen someone touts "extensibility" as a key it's not a major selling point because product feature, keep your hand on your wallet and look for what's been left out.

I'm talking about software com that promise that third parties will rally around their product and build all manner of add-ons

This is usually mere wishful thinking (and hype), but sometimes it's a smoke screen for work the developers should have done but didn't. Features that should be there but aren't. Things customers shouldn't have to worry about but

For example, take the case involving a hot Java company and a soon-to-be-hot lava company. Both make very good products - you'd probably be happy with either one - but note the important dif-

The outfit you may have heard of is RandomNoise. The San Francisco compeny's lava tool. Coda, makes it easy to add cool Java elements to Web pages. The company has received a lot of attention and it's deserved. Goda is, by most definitions, a cool tool.

One of Coda's selling points is an extensible architecture that allows third parties to add features to the program This is the same sort of deal you'll find all over the software industry. For example,

NetObjects in Redwood City, Calif., has an open architecture that allows add-ons for its Web site building tool.

The other company - which you probably haven't heard of - is caBed WebKnight. It's based in Santa Clara, Calif., and its tool is called Instant Coffee.

Yes, I'm as tired of cute Java names as anyone, but this also is a nice tool for adding Java elements to your Web site. I'm not sure whether Instant Coffee has a set of application programming interfaces for building addons. I wouldn't be surprised if it did, but

and here's the point — WebKnight doesn't count on third parties to do work that it isn't willing or able to do itself. So while both Cods and Instant Coffee

are great tools, one set of customers must wait for third parties (or later versions, een built in.

perhaps) to add features that should have You have to wonder whether anyone will really spend the time and effort nec-

essary to take advantage of Coda's alleged extensibility. Consider the economics: Let's say Random Noise sells 80,000 copies of Coda in 12 months. How many customers are likely to buy an add-on? Maybe 10%? It's pretty hard to make a living on 8.000 copies of any-

thing, especially at

\$49.95 s pop. Even if the add-on market som catches on, why should customers have to worry about buying on the aftermar-ket? Sure. Adobe's PageMaker, Quark's Quark and many other programs support

next big fad took shape: rapid application

third-party add-ons, and people earn a liv-ing selling them. But those add-ons tend to be niche pieces: they don't add functionality that the publisher of the application should have offered.

The potential problem in Ran Noise's strategy was discovered recently when the audience at my Internet Show case conference handed WebKnight two popularity prizes in a face-to-face demonstration against RandomNoise Several members of the audience said they undenstood the difference between "add on later" and "built in now." My guess is that Coda will gain a bunch of features in s future release as RandomNoise tries to

I'm not griping about RandomNoise: it's just the latest example of something that's been bothering me for many years but that I could never put my finger on. Customers shouldn't be expected to depend on third parties for features that should have been built in at the begin

Coursey, an analyst and consultant, is editor of "coursey.com," an artist neurlette available at www.coursey.com. His E-mail address is denid@cesersey.com.

Of big projects and back burners

Frank Haves

few weeks ago, I got a frantic message from an design are just s lot of hen-scratching. old friend - a message whose urgency was telegraphed by its cryptic opening: "What do you know about Sterling? My team uses IEF. Is this good news?"

Mostly, I knew what she was talking about. Sterling Software had just announced it was buying the software division of Texas Instruments — including a development tool called Composer, which is still known to many users by its original name: the Information Enging Facility, or IEF.

IEF is a workborne mainframe develment tool for my friend's IS shop. And for her, I guess it's good news that Sterling will keep IEP going as TI bails out of the computer business

For many older IS people, it probably feels like a flashback to another time - c decade or two ago, when computer-aided software engineering (CASE) tools were all the rage and "software engineering" was the buzzword of the day.

Those CASE tools never really caught on. Some of them overpromised and underdelivered. But even the ones that really worked - that became valued additions to some IS shops' toolboxes - required a huge shift in the way devel opers thought about creating software.

The idea was that software engineering isn't programming jany more than structural engineering is riveting girders or

pouring concrete. Engineering is analy-sis and design, all the work that needs to be done before pouring a frame of con-crete or writing a line of code. It requires discipline and a rigorous approach. And frankly, it's not much fun. Coding - that's fun. Just ask any coder. For a real code-slinger, analysis and

evelopment (RAD) tools such as Visual asic and PowerBuilder. RAD tools are everything CASE wasn't They're flashy, colorful and easy to demonstrate to the boss. They have a limited

range, but they pay for emselves in no time That's the trouble that limited range. It's easy to build quick, tactical projects with RAD tools, but those projects won't scale up to support the whole organization, as many IS shops have

And we need those projects to scale up. secause we're long overdue for overhauling some of our enterprise applications. Let's face it: We were hoping some body would come up with a magic tool that would provide RAD's quick-hit de-velopment without demanding software eering's noin So for a decade, we've focused on tacti-

discovered to their dismay

cal desktop applications and tools and No wonder software engineering never made it in most IS shops. Instead, those put big, mission-critical applications on the back burner. shops coded their way along until the The magic tool never arrived. And

soon you'll again have to start building big, mission-critical, enterprise-scale ap-

That means engineering - complete with all the pain and effort You won't get the job done with quick

hit tools. Those big projects will take real engineering work - real analysis of your anization's functional needs, real high-level design and real infrastructure decisions. That will be expensive and time-consuming. It won't be flashy or easy to demonstrate to your nontechnical

But if you don't want to be caught unprepared when the CEO says your competition has re-engineered all its system owing market shace like a glutton and IS has to match those capa bilities and what are you going to do about it - if you don't want that nightmare, better start thinking about engi neering now. []

Hoyes is Computerworld's staff columnist. His Internet address is fronk, haves

The Back Page



Usenet feroms

The following are Usenet news tion threads rec nd on the Internet. You may be able to pick up the thread by enter-ing keywords at the search engine town deianous.com.

- e"Object-oriented 'coding' isn't real programming" (comp.lang.c++)
- 9"My old CTOS system is dead! Need help!" (comp.sys.unisys) o"Pansword crackers"
- (comp.security.misc) o' Which one is better for a Web server, NT or Linux' (comp.os.ms-windows.nt. selections
- "'My boss says the year 2000 isn't an issue" (comp.software year-2000)
- a Features missed most in lava" (comp.object)
- a"U.S. programming produ-tivity goes through the floor" (comp.software-eng)

a Send your alt.cw contributions to tts @cs.com. If your nem is used. you'll receive a cool T-shirt.

WORD ASSOCIATIONS

og trouble dreaming up new products? Jeffrey urges, a marketing export at Rensselaer Polytechnic Nute in Trey, N.Y., uses a computer to match a noun

"food" with hundreds of verbs. Some combina-

ch as "unwrinkle food," are too bizarre. But rt to spelling food" scored high with focus-group

ers who want a bacteria-

er for leftevers in the back

ers who said

hey need a way to uncook

Given the report that

265,000 laptops were str last year, users may be will-

ing to spend \$50 to keep





that \$5,000 notebook around. So Innovative Security Products in Shawnee Mission, Kan., offers the Alarm Guard portable alarm device. The system sounds the alarm if the transmitter on the notebook gets more than 10 feet away from the beener-like receiver on your belt or in your pocket.



If you can't visit the emotionally gripping Vietnam Vetera perial in Washington for Memorial Day, the next best thing is the Werld Wide Web sita at thewall-usa.com. It features database that can be searched for the more than 58,000 imes on The Wall. Each name has about 25 facts displayed, such as hometown, age, length of service and - most chilling how the soldier died. The database also gives directions on how to find the name on the well in Washington, such as "panel OTE. fine 31."

nside Lines

endor hyperbole of the week: Lawson Software's invitation to a press conference this Wednesday screamed in copital letters that its new "self-evident applications" based on the Internet

"WILL TRANSCEND/REPLACE ALL CLIENT/SERVER TECHNOLOGY." Just like client/server technology consigned mainframes to the dusthin of history, sh? The body of the invite olso mentioned the term "new paradigm" not once, but twice. That colls for a ticket from the Paradigm Police, we're affect. If you have some news items that could transcend/replace the ones we ron in this week's paper, contact news editor Potricia Keefe et (508) 820-81810 potricio keefe@cw.com.



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